

224042

JPRS-TTP-88-010  
11 JULY 1988



**FOREIGN  
BROADCAST  
INFORMATION  
SERVICE**

# ***JPRS Report***

## **Telecommunications**

**DISTRIBUTION STATEMENT A**

Approved for public release;  
Distribution Unlimited

**DTIC QUALITY INSPECTED 3**

REPRODUCED BY  
U.S. DEPARTMENT OF COMMERCE  
National Technical Information Service  
SPRINGFIELD, VA. 22161

19980528 139

10  
32  
A03

# Telecommunications

JPRS-TTP-88-010

## CONTENTS

11 JULY 1988

### CANADA

Telesat To Begin Marketing Business TV Service [Jane Becker; Toronto <i>THE GLOBE AND MAIL</i> , 2 May 88]	1
CNCP Given Nod To Offer Fax Services on Phone Company Turf [John Partridge; Toronto <i>THE GLOBE AND MAIL</i> , 18 May 88]	1
Bell Receives Telecommunications Contract From Malaysia [Toronto <i>THE GLOBE AND MAIL</i> , 19 May 88]	2

### CHINA

China on Satellite Communications, Space Development [Liu Kaichen; Beijing <i>RENMIN RIBAO</i> , 17 Jun 88]	3
Satellite Launch Program Defended [Wang Yougong; Beijing <i>RENMIN RIBAO</i> , 20 Jun 88]	3
Satellite Results Described [Beijing <i>XINHUA</i> , 22 Jun 88]	4
Second Telecommunications Boom in China [Gao Xinqing; <i>RENMIN RIBAO</i> , 6 Jun 88]	4

### EAST ASIA

#### HONG KONG

Cable & Wireless Will Offer Shares to China [Stephen Leather, David Wallen; Hong Kong <i>SOUTH CHINA MORNING POST</i> , 1 Jun 88]	6
Aspects of Pending Broadcasting-Law Changes Discussed [Lulu Yu; Hong Kong <i>SOUTH CHINA MORNING POST</i> , 20 May 88]	7
Use of Satellite Dishes for TV Reception May Grow [Victor Agustin; Hong Kong <i>HONGKONG STANDARD</i> , 6 Jun 88]	7
Official Discusses BBC, Other Local Radio Changes [Hong Kong <i>HONGKONG STANDARD</i> , 15 May 88]	8
Worldwide Optical Fiber Network Planned for 1990's [Hong Kong <i>HONGKONG STANDARD</i> , 25 May 88]	9

#### TAIWAN

Taiwan Plans To Launch Satellite in 1995 [Taipei <i>CNA</i> , 20 Jun 88]	9
Satellite Communications Plan Said Approved [Hong Kong <i>ZHONGGO TONGXUN SHE</i> , 21 Jun 88]	9

### LATIN AMERICA

#### ST CHRISTOPHER AND NEVIS

Nevis Acquiring New Radio Station, Transmission Tower [Basseterre <i>THE DEMOCRAT</i> , 21 May 88]	10
---	----

### NEAR EAST & SOUTH ASIA

#### AFGHANISTAN

Stone Laid for TV Station [Kabul <i>THE KABUL TIMES</i> , 10 May 88]	11
--	----

## BAHRAIN

- Mobile Phones Ordered From Finland's Nokia-Mobira  
[Helsinki HELSINGIN SANOMAT, 26 May 88] ..... 11

## INDIA

- Communications Satellite Launch Set for 21 Jul 1988 [Delhi Domestic Service, 8 Jun 88] ..... 11  
Four More Remote Sensing Satellites in 1988-89  
[K. K. Sharma; Calcutta THE TELEGRAPH, 9 May 88] ..... 11  
Details on Operation of Remote Sensing Satellite [New Delhi PATRIOT, 8 May 88] ..... 12  
Space Program for 1990's To Stress Communications [Calcutta THE STATESMAN, 3 May 88] .... 12  
Indo-British Joint Research in Fiber Optics Planned [Madras THE HINDU, 25 May 88] ..... 13  
Asian Development Bank Loan for Telephone Improvement  
[Bombay THE TIMES OF INDIA, 29 Apr 88] ..... 13  
Factory for Manufacture of Large Electronic Exchanges [New Delhi PATRIOT, 23 May 88] ..... 14  
Details of Plans To Expand Radio, Television Services [New Delhi PATRIOT, 24 May 88] ..... 15  
Businesses Seek Improvement in Telecommunications ..... 15  
Deregulation Ruled Out [Calcutta THE TELEGRAPH, 13 May 88] ..... 15  
Study on Policy, Progress [Calcutta THE TELEGRAPH, 13 May 88] ..... 16

## PAKISTAN

- Satellite Tracking Station Begins Operation [Islamabad Domestic Service, 5 Jun 88] ..... 16

## WEST EUROPE

### EUROPEAN AFFAIRS

- France Telecom, Bundespost Form Subsidiary for Value-Added Services ..... 17  
Cooperation Seen As Key  
[Francois Granon; Paris ZERO UN INFORMATIQUE, 9 May 88] ..... 17  
Details on Firm's Setup [Jean-Pierre Jolivet; Paris L'USINE NOUVELLE, 11 May 88] ..... 17

## BELGIUM

- Belgium About To Implement Pilot ISDN Network  
[Groot Bijgaarden; DE STANDAARD, 23 Feb 88] ..... 18

## FEDERAL REPUBLIC OF GERMANY

- Ground Monitoring Satellite System With France Proposed  
[Frankfurt/Main FRANKFURTER ALLGEMEINE, 13 May 88] ..... 19  
SPD Divided on Space Resolution  
[Frankfurt/Main FRANKFURTER ALLGEMEINE, 7 May 88] ..... 19  
Postal Reform Criticized by CSU, FPD [Munich SUEDEDEUTSCHE ZEITUNG, 13 May 88] ..... 20

## FINLAND

- Government's Telecommunications Chief on Privatization  
[Pekka Tarjanne Interview; Helsinki HELSINGIN SANOMAT, 3 May 88] ..... 20  
Vistacom Plans World's First Video Phone Series Production  
[Stefan Lundberg; Stockholm DAGENS NYHETER, 11 May 88] ..... 22

## FRANCE

- National Telephone Network Adapted for Future Digital Services  
[Paris ZERO UN INFORMATIQUE, 25 Apr 88] ..... 23

## NETHERLANDS

Interview With Philips Manager on Future of D2-MAC, HDTV <i>Duesseldorf VDI NACHRICHTEN, 15 Apr 88]</i> .....	24
--	----

## NORWAY

Telecommunications Agency Chief Backs Increased Privatization <i>[Kjell Aaserud; Oslo AFTENPOSTEN, 10 May 88]</i> .....	26
--	----

## TURKEY

Viewers Outside Channel-2 Area Watch Soviet TV <i>[Istanbul TERCUMAN, 13 May 88]</i> .....	27
--	----

**Telesat To Begin Marketing Business TV Service**  
55200042 Toronto *THE GLOBE AND MAIL* in  
English 2 May 88 p B7

[Article by Jane Becker]

[Excerpts] Ottawa—Telesat Canada, 49.9 percent owned by the federal Government, is behaving more and more like a private company.

Established in 1969 as an engineering company to put the Anik communications satellites in space, Telesat 3 years ago ended an agreement with Telecom Canada to be its marketing arm, and began selling its service—chiefly space on the Aniks—itsself.

Now, with the acquisition of 10 small-diameter satellite receiving stations, or VSATs, and two teleports, Telesat is expanding the voice and data transmission services it already offers businesses to include Business TV (BTV).

The teleports, already operating in Montreal and Toronto, (two more are being built at Edmonton and Calgary), are central transmitting stations where users share space on an array of satellite antennae, another cost reduction. This is also where the BTV signal can be scrambled, with de-coders at the receiving end. The Montreal teleport has a production studio.

Telesat expects to start selling the service this month, and has hired a Toronto video-conference consultant to get it off the ground. The service is to be end-to-end, with Telesat providing consulting services, arranging BTV productions if necessary, and installing transmitting and receiving equipment, as well as leasing satellite space.

This should bring Telesat far more revenue than simply selling BTV space on an Anik at \$1,000 a month for 0.5 percent of a channel, said Richard Jestin, Telesat's director of telecommunications. He predicted revenue of about \$500,000 from BTV in the first year, and \$7.5-million annually by 1995.

The first BTV users will probably be businesses already using Telesat's satellite voice and data transmission service, Mr Jestin said.

"The VSATs mean we can easily add BTV to the service at much less cost than starting a network from scratch."

Telesat had its best year yet in 1987, with profit of \$18.9-million on revenue of \$118.1-million. At present, about 60 percent of revenue comes from broadcasters, such as the CBC, which lease satellite space for TV transmission. But Mr Jestin expects this ratio to change, with business clients providing up to 70 percent of total revenue—estimated at \$100-million annually—by 1992.

Besides the federal Government, Telesat shares are held by a number of Canadian telephone companies, including Bell Canada, and other common carriers, chiefly Canadian National Railway Co. and Canadian Pacific Ltd.

/9604

**CNCP Given Nod To Offer Fax Services on Phone Company Turf**  
55200046 Toronto *THE GLOBE AND MAIL* in  
English 18 May 88 p B4

[Article by John Partridge]

[Text] CNCP Telecommunications finally has gained regulatory approval to provide facsimile transmission services in Bell Canada and British Columbia Telephone Co. territory and is calling the development a milestone.

Before the regulator's decision, Toronto-based CNCP could provide the service only to subscribers to its private broadband network.

Now it can offer it to telephone/fax users in British Columbia, Ontario, much of Quebec, and other areas served by Bell and B.C. Tel.

"This is a milestone because it is another move toward free competition in telecommunications," company spokesman Austin Elliott said in an interview.

Bell, the utility arm of BCE Inc. of Montreal, has opposed CNCP every step of the way. But yesterday, spokesman Charles Gravelle would say only that "we're not very pleased." He added that Bell will comment further shortly.

The Canadian Radio-Television and Telecommunications Commission has allowed competition in long-distance data—though not voice—transmission within Canada since 1979.

But CNCP had been unable to satisfy the commission until recently that it would be able to prevent the lines from being used for voice transmission—which remains a phone company monopoly—if it were allowed to connect with the latter's network.

However, CNCP has appeased the CRTC on that score. It will install voice-data discriminators that will terminate a facsimile transmission if it is preceded by more than 70 seconds of voice communication.

Nigel Brachi, product manager for CNCP's Telex and facsimile services, said its fax transmission rates will be 40 to 70 percent lower than those charged by Bell and B.C. Tel.

He is in the process of rejigging the rates to reflect the most recent round of cuts the CRTC ordered in the phone companies' long-distance tariffs.

Those cuts, which took effect Monday, saw long-distance charges for calls to the rest of Canada from Bell's territory drop by an average of 24.6 percent.

In a brochure produced before the cuts took effect, CNCP estimated that transmitting a three-page document at 45 seconds a page between Toronto and Montreal would cost about \$1.35 via the phone company, and 44 cents via CNCP. For Toronto to Vancouver, it said, the costs would be \$2.82 and \$1.75 respectively.

CNCP will charge an access fee of \$30 a month for fax users who wish to tap into its new service, Mr. Brachi said. That means potential customers likely would have to be spending at least \$100 a month on faxing to gain from the lower rates.

Mr. Brachi said CNCP will install an automatic dialing device on customers' phone lines that will determine whether a destination phone number is within a CNCP broadband area. If it is, the call will be routed via broadband; if it isn't, it will go via the phone company's lines.

Mr. Brachi also said the fax market in Canada is growing rapidly, with about 84,000 transmitter/receivers in use at the end of 1987.

Early projections suggested another 65,000 units would be in service by the end of this year, but Mr. Brachi said dealers now estimate that about 30,000 were shipped in the first quarter alone.

/9738

**Bell Receives Telecommunications Contract From Malaysia**

55200045 Toronto *THE GLOBE AND MAIL* in English 19 May 88 p B8

[Text] Bell Canada International Inc., a unit of BCE Inc. of Montreal, has been awarded a two-year contract by Syarikat Telekom Malaysia Berhad (STM), Malaysia's national telecommunications operating company, for software development and consulting services.

The contract is valued at 25 million Malaysian ringgit (\$12 million) and will involve 40 BCI employees.

The new contract will require the installation of two large mainframe computers linking 2,000 terminals throughout Malaysia.

/9738

### **China on Satellite Communications, Space Development**

*HK2606033088 Beijing RENMIN RIBAO in Chinese  
17 Jun 88 p 6*

[Dispatch by reporter Liu Kaichen (0491 7030 1368): "China Expresses Willingness to Cooperate With Other Countries in Conducting Peaceful Exploration of Outer Space"]

[Text] United Nations, 14 Jun—At the 31st Session of the UN Committee on the Peaceful Uses of Outer Space held today, Wang Houli, head of the PRC delegation, declared that China is willing to carry out various forms of international cooperation and technical exchanges through various channels to contribute to peaceful exploration of outer space.

The session opened yesterday at the United Nations Building. The main topic of the session is to maintain the means and methods of peaceful uses of outer space.

In his speech, Wang Houli summarized China's major development in the peaceful uses of outer space over the past year. In August last year, he said, China successfully launched and retrieved a scientific survey and technical experimental satellite with a China-made "Long March 2" carrier rocket. China used this satellite to conduct a microgravity experiment for the first time and offered delivery services to foreign firms. This indicates that China has successfully transcended the conventional experimental stage and has reached a new level in independently exploring outer space resources for peaceful purposes. Later, China successfully launched and recovered several satellites installed with scientific experimental facilities. This shows that China's "Long March 3" rocket and its launching and control technology has become mature and perfect which is highly reliable.

Wang Houli pointed out that "China is developing a complete set of satellite application system including remote control, meteorological, and communication satellites which will gradually be put into operation."

Wang Houli announced that the Chinese Government will cooperate with the United Nations to sponsor an international symposium on development and application of the communication system in Beijing in September this year. This will be China's contribution in kind to the United Nations' outer space application scheme.

### **Satellite Launch Program Defended**

*HK2806073688 Beijing RENMIN RIBAO in Chinese  
20 Jun 88 p 3*

[Report by reporter Wang Yougong (3769 0645 1872): "A Responsible Person of China's Changcheng (Great Wall) Industrial Company Solemnly Reiterates That It Is Irreproachable for China To Enter International Satellite Launching Market, and That Rumors Spread by Certain Public Figures in the West Are Not Worth Refuting"]

[Text] Wu Keli, deputy general manager of China's Great Wall Industrial Company, said at a signing ceremony of an agreement between his company and the

Asian Satellite Telecommunication Company Limited: Some public figures in the West find fault with China's policy of providing satellite launching services. Some individuals have even gone so far as to spread rumors, vilifying the satellite launching services provided by the Great Wall Industrial Company. They say that China's launching service relies on "subsidies" from the government, and that it is a "dumping at low prices," and that it is "unfair competition." These public figures have intended to use the U.S. Congress and the COCOM to impose restrictions on China's launching service entering the international market. For this reason, it is necessary for China's Great Wall Company to reiterate the following:

1. Through development over the past 30 years or so, China has made great achievements in its astronautics industry. It has manufactured the "Long March" series of carrier rockets, scientific experimental satellites, retrieved satellites, and telecommunications and broadcasting satellites, and so on. In addition, China has two launching sites, and testing and controlling tracing networks. What is more important is that China has trained technical personnel responsible for research, design, production and experiments. Now we have the capability of providing launching services in the international market. In October 1985, a responsible person of the Chinese Ministry of Astronautics Industry openly announced to the world that China's carrier rockets would enter the international market of launching services. In this connection, China's Great Wall Industrial Company got in touch with scores of companies in more than 10 countries in the world on the issue of launching services. Fairly great progress has been made in this regard. The signing of this agreement on advanced bookings is our another progression in the business of providing launching services.

2. China is a developing country with limited production capacity. At present, the "Long March No 2" and "Long March No 3" carrier rockets can provide about 11 opportunities per year for launching services for foreign consumers. Therefore, China entering the international launching market to provide service for foreign countries does not mean competition with the launching service organs in foreign countries, let alone a "threat" to them. A few years ago, due to the accident of the U.S. space shuttle, and the failure of the Ariane rockets of Europe, the world was facing a shortage of rockets. China is entering the world market for launching service with its limited capability. Instead of constituting a competition with, or a threat to launching service organs in foreign countries, it is a supplement to the international market for launching services. In the meantime, it has provided consumers with a new option. This will promote the development of the international astronautic effort, including satellite communication undertakings. This will be China's contribution to the civilization of mankind, and scientific and technical progress of the world.

3. Launching services provided by China, and the transfer of satellite, or rocket technology are two completely

different concepts. The fact the foreign satellites are shipped to China for launching is of a "transit" nature, just like a passenger changing his plane in any international airport. This does not belong to the scope of technological export. This does not mean the transfer of the consumers' satellite technology to China. The fact that we provide launching service for foreign consumers does not mean that we transfer our rocket technology to those foreign countries. In the process of shipping foreign satellites to the Chinese territory up to the time when they are launched by China's rockets, we are willing to handle various affairs in accordance with the concept of "transit." We are happy to help our consumers simplify procedures for their satellites entering China, including the exemption of examination. Upon the arrival of their satellite in China up to the time of launching, personnel sent by our consumers may control and supervise the whole process. China has no intention of obtaining any technical patents, or secrets of foreign satellites through the provision of launching services. Now a handful of public figures in the West are accusing us of "unjust competition." In the meantime, they are lobbying the U.S. Congress and the COCOM. Under the pretext of restricting technological exports to communist countries, they are trying to stop China from entering world market of launching service. In so doing, they intend to monopolize forever the business of launching satellites. Should this be regarded as fair competition? This is a hegemonism in international trade. We resolutely oppose this.

4. Our present quoted prices for launching services is generally lower than the launching prices of the carrier rockets of European countries and the United States. It is because labor force expenses in China are lower. In the meantime, we do not seek high profits. It is completely groundless for a handful of persons in the West to accuse us of "receiving great subsidies from the government," or "dumping at low prices." At present, enterprises in China are following a contract responsibility system. They assume sole responsibility for their own profits and losses. China's Great Wall Company is of no exception. Instead of providing us with subsidies, the state has levied taxes on us. Without profits, how can we pay taxes to the state, and feed our numerous workers and staff members?

Wu Keli pointed out: When a new type of carrier rocket has just entered the market, they are sold at special prices. When the Ariane rockets of Europe first entered the international market, they were sold at a very low price. Free launching was even provided. In the course of providing launching service, the United States also adopted such policy. With regard to our newly produced carrier rockets, we also follow the same international practice. We only offer low prices for the first two, or three launchings. After that, we begin to provide launching service at normal prices.

### Satellite Results Described

OW2306123388 Beijing XINHUA in English  
1414 GMT 22 Jun 88

[Text] Beijing, June 22 (XINHUA)—China will provide satellite design and manufacturing services for foreign clients or lend them recoverable satellites for scientific experiments.

Xie Haoran, senior engineer, at the Aerospace Industry Ministry, told American delegates attending the current China-U.S. joint session on industry, trade and economic development here today that China is negotiating with Brazil for co-production of an earth resources satellite.

He said that China has signed agreements with companies in the Federal Republic of Germany on piggyback payload services for two test facilities. Last year, China for the first time successfully provided piggyback payload services to Matra, a French company,

China will further improve the payload capability of the Long March family of launch vehicles so as to meet the requirements for launching various kinds of satellites both at home and abroad, he said.

In the next few years, China will develop different kinds of special application satellites including large-capacity broadcasting and communications, synchronous meteorological and earth resources satellites, he said.

China is now preparing for the development of a space transport system and space station, he said. At present, Chinese scientists only conduct feasibility studies.

China has already successfully launched 22 satellites, including 10 recoverable ones. The Long March family of launch vehicles is capable of launching various types of satellites including geostationary and sun-synchronous orbit satellites.

### Second Telecommunications Boom in China

HK1606125888 Beijing RENMIN RIBAO in Chinese  
6 Jun 88 p 1

[Dispatch by reporter Gao Xinqing (7559 2450 1987): "Development of Coastal Export-Oriented Economy Calls For Development of Postal and Telecommunications Services"]

[Text] Beijing, 6 Jun (RENMIN RIBAO)—What is the way out for postal and telecommunications services which are now facing the second powerful shock wave?

Reform and opening up brought the first shock wave for the development of postal and telecommunications services which were lagging behind times. The strategy for economic development in coastal areas and the great development of the export-oriented economy put forth by the central authorities has brought the second shock



wave which more strongly prompts the development of postal and telecommunications services. Hainan Governor Liang Xiang sent an extra-urgent telegram to the Minister of Posts and Telecommunications, complaining that it is very difficult for people in Hainan to make a long-distance call to any place on the mainland and to Hong Kong and Macao, and he urged the ministry to take effective measures to solve the problem. Jiangsu Governor Gu Xiulian and Shandong Governor Jiang Chunyun separately paid a visit to the minister or made a special trip to Beijing to demand improvement of outgoing international telecommunication service between several important cities and foreign countries and increasing the international telephone service. A phone call from Xinjiang said that responsible persons of the region would make a special trip to Beijing to demand improvement of the outgoing telecommunication service.... From January to April this year, the business volume of international long-distance telephone service increased by 71.2 percent over the same period last year. But the number of calls canceled was considerable. At present, over 50 percent of long-distance calls between provinces and between cities in neighboring provinces are not put through. Incomplete statistics show that there are now on the list a total of 350,000 applicants for local telephone lines in the country.

Where is the way out? Minister of Posts and Telecommunications Yang Taifang pointed out at a national conference on telecommunications yesterday: In brief, our experience indicates that it is necessary to promote cooperation between departments and between areas, to implement the principle of tapping the potential of the state, the locality, the collective, and the individual, to make overall planning with focus placed on key links, and to develop telecommunications in a coordinated way with all levels assuming their own responsibilities.

Specialists participating in the conference noted: During the two major readjustments of the international production structure after World War II, telecommunications always developed ahead of time in those countries enjoying high economic growth. Such a pattern applies to both Japan and the "four small dragons" of Asia. As far as the guiding ideology is concerned, we must bear in mind that telecommunications must be developed more rapidly and ahead of time; and, for coastal and economically developed areas, the faster telecommunications are developing better—super-high development speed is absolutely not a problem. As a nationwide telecommunication network, consisting of exchange, transmission, terminal, and appropriate interface equipment, is a fund- and technology-intensive project, it needs huge investment and cannot be undertaken by the state alone. For this reason, the Ministry of Posts and Communications has made it a rule that all construction projects of telecommunication trunk lines between the central authorities and provinces, between large administrative regions and provinces, and between different provinces shall be undertaken by the Ministry of Posts and Telecommunications; while all telecommunication line projects linking provinces with prefectures, cities, counties, towns, and townships, those telecommunication lines between neighboring provinces, and those in rural areas shall be run by various localities on their own.

Yang Taifang urged local governments to extend more assistance and support. He demanded that all postal and telecommunications departments make good use of all preferential policies enacted by the state or local governments; and that they incorporate these preferential policies into laws, regulations, and ordinances step by step like the Shanghai government did, and thus ensure that telecommunications will play a long-term role in economic development. Yang also called for emancipation of the mind, great courage, faster pace, and more flexible methods in the development of postal and telecommunications services.

## HONG KONG

### **Cable & Wireless Will Offer Shares to China**

55400053a Hong Kong *SOUTH CHINA MORNING POST (BUSINESS POST)* in English 1 June 88 pp 1, 3

[Article by Stephen Leather and David Wallen: "China Gets Small Stake in Telecom"]

[Text] Chinese interests are to take a 10 million share stake in the territory's biggest list company, Hong Kong Telecommunications.

The British communications giant Cable and Wireless has agreed to sell the share stake—worth some \$68.5 million at last night's closing price—to Guangdong Posts and Telecommunications Bureau.

Cable and Wireless chairman Sir Eric Sharpe said the deal—due to be signed on June 30—was an example of the "special relationship" between Cable and Wireless and China.

Hong Kong Telecommunications was formed earlier this year following the merger of the two Hong Kong subsidiaries of Cable and Wireless.

The new group combined the businesses of Hong Kong Telephone, which has the franchise to provide the territory's telephone service until 1995, and Cable and Wireless (Hong Kong) which provides its international telecommunication facilities until 2006.

The merger was seen very much as a political move, as the mainland would obviously not wish to see the territory's communication facilities so obviously controlled by a British company during the run-up to 1997 when Hong Kong is handed back to China.

The deal is a small one financially—representing little more than 0.1 percent of the share capital of Hong Kong Telecommunications—but it is very significant politically.

"This latest example of the very special relationship that exists between the telecommunications authorities in the People's Republic of China and Cable and Wireless follows the announcement of the satellite project, Asia-Sat One, jointly by CITIC, Hutchison Telecommunications and Cable and Wireless," said Sir Eric Sharpe yesterday.

"I regard this action by Guangdong Posts and Telecommunications Bureau as a welcome demonstration of their confidence in the structure, management and future prospects of Hong Kong Telecommunications."

The agreement on the deal was signed in Hong Kong yesterday by Director of Administration of the Guangdong Posts and Telecommunications Bureau Li Yi-shen and Mike Gale, Cable and Wireless' Hong Kong director.

According to a Cable and Wireless spokesman the deal was done "at a slight discount to the market price".

He added: "I suppose one would have to say that it is in recognition of China's growing interest in Hong Kong."

It is understood that more shares are likely to be offered for sale to the GPTB in the future though there are no immediate plans to do so.

Placing shares with a Chinese Government concern will further cement relations with the mainland.

Cable and Wireless has been doing business with GPTB for some time.

In 1983 they linked together, along with the Shenzhen Special Economic Zone, to provide telephone services in Shenzhen.

Cable and Wireless is obviously bending over backwards to strengthen its ties with China.

Those ties were given a boost when Hutchison Whampoa boss Li Ka-shing took a \$3 billion stake in Cable and Wireless last September, which should also stand the company in good stead with China, as Mr Li is well-respected by the Chinese authorities.

In another highly-publicised move in January, Cable and Wireless (Hong Kong) appointed its first Chinese managing director, Fung Hak-ming, who has been with the company for 40 years.

The company also offers scholarships to Chinese university graduates who study telecommunications. It has more projects underway in mainland China than any of its competitors, and not all of them are profitable.

China in turn is keen to get its hands on Western telecommunications technology.

It has marked telecommunications as a priority area during its present five-year economic plan and hopes to have a 33 million-line network in place by the end of the century.

Recently the China-owned Bank of Communications launched a unique \$200 million issue of bonds with warrants to buy shares of Hong Kong Telecommunications.

The five-year bonds will be issued in bearer form with a 5.3 percent coupon at a price of \$500,000 each.

Five warrants will be attached to each bond, each entitling the holder to buy 10,000 Hong Kong Telecom shares at \$10 each at any time until March 15, 1993.

The bonds and the warrants are to be listed on the Luxembourg exchange, according to Gina Tang, investment banking manager with the Shanghai-based Bank of Communications.

She said Hong Kong Telecom had been informed "as a matter of courtesy."

/06662

### Aspects of Pending Broadcasting-Law Changes Discussed

55400053b Hong Kong SOUTH CHINA MORNING POST in English 20 May 88 p 6

[Article by Lulu Yu: Broadcasting Body To Assume Watchdog Role"]

[Text] The Broadcasting Authority is set to become Hong Kong's watchdog for cable television and radio programming when a new law replaces the existing Television Ordinance next year.

The Secretary for Administrative Services and Information, Mr Peter Tsao, said yesterday a broadcasting ordinance would be drafted following the expiry of TV licences in December.

Meanwhile, TVB's calls for changes to the new licensing conditions regarding licensee companies' corporate structure were yesterday dismissed.

Mr Tsao said a new law to be drafted next year will cover currently proposed licensing conditions for Television Broadcasts and Asia Television as well as program and censorship requirements for radio and cable TV.

Provisions considered archaic in the existing Television Ordinance will be dropped or amended when drafters put together a package that will give the fledgling Broadcasting Authority wide powers to monitor all broadcast media in the territory, said Mr Tsao.

The authority, of which Executive Councillor Allen Lee is the chairman and Mr Tsao the vice-chairman, now acts as a watchdog only for off air TV stations because there is no legislation giving it jurisdiction over radio and the future cable TV operator.

A radio broadcasting ordinance defining the relationship between Radio Television Hong Kong and the Government will be tabled in the next session of the Legislative Council after the legislature reconvenes in October.

But an overall broadcasting law is expected to cover broader scopes, said Mr Tsao.

While some provisions of the Television Ordinance will be updated, the general spirit of the law is expected to be maintained.

The new licensing conditions for the two television companies released in recent months were designed to ensure that TV broadcasters complied with the existing law, said Mr Tsao.

TVB had been able to defy the spirit of the law and diversify into non-broadcast business under the umbrella of a holding company with nominee shareholders," he said.

"The law says that the business of a licensee is broadcasting so it should do exactly that, but we have at least one licensee operating other businesses under a holding company, which we have no control over.

"There are loopholes in the law and now that we are issuing new licences, we should at least make sure that those loopholes are not perpetuated."

Controversial aspects of the new licensing conditions involve requirements which will force TVB to undergo corporate restructuring if it were to have its licence renewed.

The company will also have to start paying royalties on its program sales abroad, a requirement strongly resisted by the TVB board of directors who recently sent a protesting memorandum to the Government.

TVB executives led by HK-TVB chairman, Sir Run Run Shaw, yesterday petitioned Mr Tsao to have these requirements changed saying the Government had been inconsistent in its policy towards TV licensees.

Mr Tsao said he was sympathetic towards Sir Run Run's argument that overseas programming government should not be taxed, but would not propose changes to the new licensing conditions.

/06662

### Use of Satellite Dishes for TV Reception May Grow

55400053c Hong Kong HONGKONG STANDARD in English 6 Jun 88 p 2

[Article by Victor Agustin: "Satellite Dishes May Rise With New Rules"]

[Text] Satellite dishes could start sprouting this year from the roofs of hotels and private residential buildings throughout Hong Kong.

The STANDARD has been told this will be possible under relaxation of private satellite television rules that the Economic Services Branch (ESB), is likely to propose.

But there would be an important financial condition put on the use of satellite dishes that would feed signals to many sets in a building such as a hotel. Fees would have to be paid to the satellite owners and to the owners of any copyrighted materials used, the sources said.

The proposed changes would likely infringe on the franchise of Cable and Wireless although Government sources maintain they would not. Cable and Wireless currently has a monopoly "to provide external television programme transmission service to and from Hong Kong, "but this exclusive licence may be modified by the Governor-in-Council.

With the proposed changes, Cable and Wireless would no longer be the sole provider of satellite TV programmes since hotels and apartments blocks would be able to distribute satellite TV programmes to other subscribers.

An Economic Services official said the proposed changes in the Telecommunications Ordinance would be forwarded to the Executive Council in one to two months.

The Post Office earlier ruled that the reception of TV signals from satellites using a private satellite dish "in (one's) own premises" and serving only one TV set was legal. Such a private satellite dish would be exempt from any telecommunications licence.

Under the proposed changes, people living in residential blocks who have put up "communal" satellite dishes may be allowed to collect fees but only to offset installation and maintenance cost, Government sources said.

The sources insist that Cable and Wireless should not feel threatened with the relaxation "since the market for English and foreign language satellite TV programmes in the territory is slim."

The sources also predicted most hotels here would opt to link up with Cable and Wireless rather than put up their own satellite dishes if they want the best possible picture quality.

"The small, one-to-two metre dishes would probably show snow in California," a source said.

In contrast, the \$10-million Cable and Wireless satellite dish in Stanley has a diameter of 13 metres.

Cable and Wireless general manager for marketing, Mr Peter Branson, said the Government has not consulted them on any forthcoming changes on the company's franchise.

He admitted though that Cable and Wireless has communicated its views on the matter to the Government.

He stressed that the agreement on access to the Intelsat (International Telecommunications Satellite Organisation) satellites was signed by the UK Government for Hong Kong, and not the Governor-in-Council.

Therefore, Mr Branson said, quoting a Post Office ruling, "all earth stations and other satellite dish aeriels accessing the system must be approved in advance by Intelsat.

And, until now, he said, Cable and Wireless was still the sole franchise holder to receive television signals from Intelsat satellites.

/06662

#### **Official Discusses BBC, Other Local Radio Changes**

55400050a Hong Kong *HONGKONG STANDARD* in English 15 May 88 p 4

[Text] The Government will decide over the next two months whether to introduce a 24-hour service of the British Broadcasting Corporation in Hongkong.

The Secretary for Administrative and Information Services, Mr Peter Tsao, said yesterday that an option under consideration was to grant a separate frequency for the BBC service.

"It may become the sixth channel of Radio Television Hongkong," Mr Tsao said after he returned from his 10-day trip to London, Belgium and Spain.

Mr Tsao said that he met with BBC officials and an understanding was reached that the service would run on a 24-hour basis. But details of the service were still under the discussion.

The BBC now broadcasts mainly on RTHK's Radio 3 and on Radio 5 in the evenings.

"But when there are various changes in the radio programmes of Radio 3, for example the prolonged meetings of the Legislative Council, the BBC service will be screened out," Mr Tsao said.

He said that the new move was aimed at providing a better service and as part of the reorganisation of RTHK's frequencies.

He said the programmes would be mainly in English, with some in Chinese. He expected that there would be sufficient demand for the service from both the expatriate and local audiences.

Mr Tsao said the possibility of setting up a third radio station would be investigated.

He said no decision was made on the future of the British Forces Broadcast Service, but its format would be different from the current broadcast.

During his visits to Belgium and Spain, Mr Tsao had addressed seminars on the general situation in Hongkong. They were organised by the Hongkong Office in Brussels.

/08309

### **Worldwide Optical Fiber Network Planned for 1990's**

55400050b Hong Kong HONGKONG STANDARD in English 25 May 88 p 5

[Text] Hongkong will be wired up with its worldwide major business partners by a high-capacity optical fibre network in the early 1990s, the managing director of Cable and Wireless, Mr H M Fung, said yesterday.

He said optical fibres would be able to provide signals of better quality than the existing coaxial network.

The optical cable between Hongkong and Japan, to be completed in 1990, would be the first part of the network coming into service, he said.

Once completed, it could be extended from Japan to the United States by hooking up with the trans-Pacific optical cable, he added.

Mr Fung yesterday officiated at the opening of the Hongkong office of the Kokusai Denshin Denwa Co Ltd (KDD). The company is the franchised operator of telecommunication services in Japan.

/08309

## **TAIWAN**

### **Taiwan Plans To Launch Satellite in 1995**

OW2006233288 Taipei CNA in English  
1543 GMT 20 Jun 88

[Text] Taipei, June 20 (CNA)—The Republic of China is planning to launch its own satellite in 1995 in order to develop its satellite telecommunications system, Li Ping-yao, vice directorate general of telecommunications, said Monday.

Li told a press conference that the plan is part of his agency's three-stage satellite telecommunications development program which was recently approved by the Executive Yuan.

According to the program, the nation will first buy or rent satellite transmitters from the International Telecommunications Satellite Organization. The transmitters, expected to be available in March 1989, will help the nation improve the efficiency and quality of domestic telecommunications service and expand communications service to remote areas and islands.

In the second stage, starting in 1990, the nation will cooperate with other Pacific nations in developing a regional satellite system. Under the system, expected to begin service in 1991, the nation will be able to establish satellite telecommunications links with nearby nations.

After the two preparatory stages, the nation should have established a firm technological basis for operating telecommunications satellites, Li said. If difficulties in applying for an orbit can be resolved, the nation will then consider seeking foreign assistance to launch its own satellite, possibly in 1995, Li said.

### **Satellite Communications Plan Said Approved**

HK2706154188 Hong Kong ZHONGGUO TONGXUN  
SHE in Chinese 1353 GMT 21 Jun 88

[Report: "Taiwan Will Have Its Own Satellites 7 Years From Now"]

[Text] Hong Kong, 21 Jun (ZHONGGUO TONGXUN SHE)—According to a report from Taipei, Taiwan's General Telecommunications Bureau under the Ministry of Communications yesterday disclosed that the plan for developing Taiwan's satellite communications has been approved by the Executive Yuan. Taiwan hopefully will have its own satellites in 1995.

The General Telecommunications Bureau was quoted today by HSIN SHENG PAO as saying that by satellite communications it means putting a satellite in a high altitude orbit of 36,000 kilometers and, with the satellite, communications can be established within the range covered by the set side angle. In addition to providing telephone, telegram, data, and visual conferences services, it will also take on telemetering, monitoring, navigation aids, data-collecting and other jobs. It will also find special application in weather forecasting and television broadcasting.

Taiwan's plan for developing satellite communications will be carried out in three steps: First, to purchase and lease satellite frequency converters from the international satellite organizations; second, to join in investments in regional satellite systems; third, to develop its own satellite systems.

## ST CHRISTOPHER AND NEVIS

### Nevis Acquiring New Radio Station, Transmission Tower

55400052 Basseterre *THE DEMOCRAT in English*  
21 May 88 p 3

[Text] The first Radio Station to be based in Nevis will be opened for business before the end of this month. The new Station, the Voice of Nevis (VON) will be located at Bath Village on land provided by the Nevis Island Administration.

The two storey building will house three studios and broadcast with a power of 10 thousand watts.

According to Cecil Herbert, the Spokesman for the owners of the Station, one of the main features ensuring the May opening, is the erection of a 275 feet tower to assist in the transmitting of the Radio Signal. A group of engineers are expected here shortly, to install the main transmitter.

The Voice of Nevis is being financed by a group of Nevisian Brothers.

/9274

## AFGHANISTAN

### Stone Laid for TV Station

55004711 *Kabul THE KABUL TIMES in English*  
10 May 88 p 4

[Text] Qalai Nau, 7 May (BIA)—The foundation stone of a TV station in Qalai Nau was laid yesterday by the governor of Badghis province.

A spokesman said that the station will be built at a cost of Afs 2,500,000 as envisaged in the protocol on direct cooperation signed between Mari province of Turkmen SSR and Badghis province.

/9604

## BAHRAIN

### Mobile Phones Ordered From Finland's Nokia-Mobira

55002463 *Helsinki HELSINGIN SANOMAT in Finnish*  
26 May 88 p 37

[Text] Turku—Nokia-Mobira is going to produce mobile telephones for Bahrain. Export of the handsets will start in the fall. Mobira has previously entered the Arabic markets, since phones made in Salo have been exported to Kuwait, Bahrain's neighbor. Bahrain Telecommunications Company in the first stage of the order is buying handsets from Mobiralta. The Bahrain emir and his bodyguard are already using Mobira phones. There are 2 million inhabitants in Bahrain, and 2 years ago the mobile phone network commenced operation. It now has about 2,000 subscribers.

/9604

## INDIA

### Communications Satellite Launch Set for 21 Jul 1988

BK0806085588 *Delhi Domestic Service in English*  
0830 GMT 8 Jun 88

[Text] The Indian telecommunications satellite INSAT-1C will be put into orbit on 21st of next month by the European launcher Ariane. The satellite has already arrived at the Kourou launch pad in French Guyana. The 1,180-kg INSAT-1C is a multifunction satellite. It will relay long-distance national and international telephone communications, television transmission, and weather data.

### Four More Remote Sensing Satellites in 1988-89

55500123 *Calcutta THE TELEGRAPH in English*  
9 May 88 p 5

[Article by K. K. Sharma]

[Text] Now that India's space programme is poised to enter a new era with the launching of four remote sensing satellites in 1988-89 the way is being cleared for its application in improving the economy and keeping a close watch on the weather, an important factor after the worst drought in a century.

The last satellite launched from the Soviet Union and the four others to go into space this year will help considerably in long-distance probing of the earth and oceans, as well as in locating natural resources. The major application areas of the remote sensing satellite programme are agriculture and land use, forestry, geology, water and marine resources and cartography.

This is possible because the satellites have as their payload three state-of-the-art cameras using charge-coupled devices as detectors. The design of the cameras is based on the concept of "push broom" scanning, using linear imaging self-scanned sensors.

The data from the satellite will be converted into a variety of data products such as films, microfilms, computer compatible tapes and false colour composites. For this, an ambitious programme has been prepared to use the data effectively. Since availability of tools and training for user agencies in the interpretation and analysis of data products in the different applications are crucial, the National Remote Sensing Agency and the Space Applications Centre, the two wings of the Indian Space Research Organisation (ISRO) have developed hardware interpretation aids.

The satellite completes one rotation of the earth in 103 minutes. Such an orbit will enable the spacecraft to revisit some locations on the earth every 22 days. It will be ensured that the equator is crossed at 10:00 a.m. IST every day.

Remote sensing has progressed from photo-interpretation to digital processing of data. To support the range of activity, ISRO is setting up five regional centres to enable users to familiarise themselves with methods of photo-interpretation and digital analysis of data.

The spacecraft have been designed to last a long time and have gone through severe tests to ensure their reliable functioning. The utility of a sophisticated, high-cost spacecraft instead of an aircraft for remote sensing was a controversial point, but the issue was settled in favor of spacecraft for two reasons. First the advantages of observation are immense from higher altitudes. Second, the view is synoptic and observations can be repeated any number of times, unlike from an aircraft.

Plans have been made to initiate new series of satellites in the next decade for remote sensing. While initially, collaboration with the Soviet Union will continue, the next satellite in the middle of 1988 will be launched from Kouru in French Guyana and will be built at the Ford Aerospace Corporation in the US.

In the near future, India is likely to achieve total self-reliance in remote sensing capabilities when it develops the polar satellite launch vehicle (PSLV) that is capable of launching payloads up to 1,000 kg. (Economic News Service)

/9738

**Details on Operation of Remote Sensing Satellite**  
*55500121 New Delhi PATRIOT in English*  
*8 May 88 p 1*

[Text] The first Indian remote sensing satellite, IRS-1A has achieved operational status with the realization of its planned orbit at an altitude of 904 km and 103 minute period of revolution and completion of one full 22-day cycle.

This enables the acquisition of imageries along precise ground tracks over the country. On 25 April 1988, IRS-1A completed one cycle of imaging of the entire country. The present and the successive cycles will result in re-visit of identical areas imaged earlier every after 22 days, says a Indian Space Research Organisation (ISRO) release.

Since the launch on 17 March the onboard camera systems have been operated for image acquisition during 80 passes yielding about 2500 frames of data from LISS-I and about 5000 frames from LISS-IIA and LISS-IIB cameras.

All the onboard systems are functioning normally. The mission control at the Spacecraft Control Centre (SCC), Bangalore, has taken up normal phase operations.

/9738

**Space Program for 1990's To Stress Communications**  
*55500130 Calcutta THE STATESMAN in English*  
*3 May 88 p 11*

[Text] The space programmes for the decade 1990-2000 which are now being finalized, will focus strongly on continuing operational space services to enable the country to device the full benefits of space technology in the areas of communication, including TV and radio broadcasting and networking, resources surveying, and meteorology, it is learnt.

The focus will also be on the introduction of specialized services such as search and rescue operations, mobile communication, and drought monitoring. The development of both rocket and satellite technology and the building up of industrial interfaces is also envisaged.

The programmes will include a few research and development elements, keeping in view the world scenario as well as the requirements of the country beyond AD 2000.

The objective is to develop and master space science and space technology so as to exploit their potentialities for the socio-economic development of the country. Towards that end, indigenous capabilities are being developed to design and fabricate launch vehicles, satellites and their payloads, as well as ground systems for in-orbit control, reception, handling, processing and use of data.

In the field of launch vehicles, the country has acquired the capability to launch 50 kg-class satellites through the Satellite Launch Vehicle-3. Augmented satellite launch vehicles, to launch satellites of the 150-kg class, are being developed and the second development flight is expected to take place shortly. The polar satellite launch vehicle with capability to launch 1,000-kg class satellites is also being developed: this will provide the country with the capability to launch 1000 kg class remote sensing satellites in polar sun-synchronous orbits. The first developmental flight will take place in late 1989.

Studies are also on to design and develop further powerful launch vehicles with the capability to launch INSAT class satellites.

In satellites, after the successful experiments with the Bhaskara series of earth observation satellites and Apple, an experimental communications satellite the country launched on March 17 the first Indian Remote Sensing satellite, IRS-1A, from a Soviet cosmodrome.

IRS-1A is the first of a series. The IRS project envisages an all-indigenous development of 3-axis stabilized satellites, weighing about 980 kg, to be launched in a polar sun-synchronous orbit for remote sensing applications. These will help in effective use of remote sensing technology and promote the establishment of a National Natural Resources Management System.

The INSAT-1B, the operational Indian satellite in orbit representing the first generation Indian national satellite system, provides services for long distance telecommunications, radio and television programme distribution, and networking and meteorology. Further satellites in the INSAT-1 series are scheduled for launch soon: INSAT-1C in July this year through the Ariane launch vehicle from Kouru in French Guiana, and INSAT-1D in March-April 1989 through a U.S. Delta launch vehicle.



The INSAT-1 series was conceptually designed in India and procured from abroad.

Work is progressing on the development of the second generation INSAT-II spacecraft series which is entirely indigenous and will eventually be launched from India by the Indian Geo-synchronous Satellite Launch Vehicle, GSIV. INSAT-II is more complex and sophisticated than INSAT-I. Operational INSAT-II spacecraft are to be preceded by two INSAT-II test spacecraft to be launched in mid-1990 and mid-1991.

The National Natural Resources Management System intended to integrate the data obtained through remote sensing into the existing system with appropriate technological, managerial and organization linkages, is being built up rapidly.

07310

#### **Indo-British Joint Research in Fiber Optics Planned**

55500131 Madras *THE HINDU* in English  
25 May 88 p 23

[Text] A research collaboration in the field of fibre optics and optical communication systems has been agreed on between the Indian Institute of Technology (IIT), Delhi, and the University of Strathclyde and the British Telecom Research Centre. The joint research will be funded under the Indo-British Technical Cooperation Programme.

The project has special importance in view of the current efforts in the field of optical communications in India. Field trials and evaluation of available imported optical systems have already been started by the Department of Telecommunications. The Telecommunication Research Centre in New Delhi has already installed an 8,448 mbit/sec optical fibre repeaterless telephone link over 4.5 km between two exchanges.

The Electronics Commission has suggested that efforts should be initiated in the country with a view to attaining "trial indigenous system capabilities of 140 Mbit/sec optical fibre communication system as soon as possible, including all the aspects related to the associated research, design, development and manufacture." In this context, IIT, Delhi, has been identified as one of the major groups working in this field.

The objectives of the collaboration are:

—To develop trained manpower in fibre and integrated optics related to optical communication systems and fibre optic devices.

—To undertake R&D in the areas of fibre optic devices and sensors, fibre lasers, integrated optics and fibre optic local area networks (FOLAN).

—To assess performance criteria for fibre optic communication systems and networks, and

—To develop the base for optical signal processing for teaching and research.

The British inputs will consist of equipment, training in Britain and visits of British consultants to India. During the four-year period of collaboration, 15 British specialists will visit IIT, Delhi, eight senior staff from IIT will visit the U. K., eight staff members will receive training in Britain, and British equipment worth 210,000 will be presented to IIT, Delhi. The project will be managed by the British Council Division, British High Commission, in Delhi on behalf of the Overseas Development Administration, London.

07310

#### **Asian Development Bank Loan for Telephone Improvement**

55500124 Bombay *THE TIMES OF INDIA* in English  
29 Apr 88 p 16

[Excerpts] The Asian Development Bank has approved a \$135 million loan for a telecommunication project in India, designed to make the telephone system more efficient in some major cities, and a grant of \$75,000 for a feasibility study for a roads improvement project in some states.

The telecommunication project loan, approved recently from the bank's ordinary capital resources (OCR), has a repayment period of 24 years, including a four-year grace period. Interest will be determined in accordance with the bank's pool-based variable lending rate system, according to bank sources.

Under the project, manual trunk exchanges will be modernised, domestic satellite facilities improved and digital equipment introduced at international gateway telephone exchanges. This will include a new exchange, an international telecommunications satellite organisation earth station to be established at Calcutta, and an international maritime satellite organisation coast earth station to be established at Arvi near Bombay.

The manual trunk exchanges at Bombay, Delhi, Madras, Calcutta, Ahmedabad, Bangalore, Pune and Hyderabad will be modernised by the provision of computerised digital equipment and automated operator positions.

Upgradation will be done of international gateway telephone exchanges at Bombay, Delhi and Madras by the provision of digital equipment, operator positions, echo cancellers and related equipment.

The cost of the project is \$247 million. Procurement of equipment will be carried out by the department of communications and by the Videsh Sanchar Nigam in accordance with the bank's guidelines for procurement.

/9738

**Factory for Manufacture of Large Electronic Exchanges**

55500128 New Delhi PATRIOT in English  
23 May 88 p 9

[Text] Negotiations are under way between C-DOT (Centre for Development of Telematics) and the Indian Telephone Industries for the setting up of a factory for the bulk production of large electronic exchanges (1600 P) at Bangalore, reports PTI.

C-DOT executive director G. B. Meemansi told PTI in an interview that the negotiations had been initiated for taking advance action to manufacture the exchange (developed by the C-DOT) under a memorandum of understanding signed in 1986 by the two organizations.

Mr. Meemansi said this was despite a decision yet to be taken on the location of the second ESS exchange factory. The attempt would now be for speedy transfer of the technology developed by the C-DOT so that the country could take advantage of the new developments in the field of telecommunications.

Mr Meemansi said the first ever large exchange of the 1600 P was presently under installation at Ulsoor in Bangalore. He said successful trials of the C-DOT 512 P had given them sufficient confidence to complete field trials of the Ulsoor exchange of Bangalore telephones by end of the year.

The exchange would be plugged on to departmental telephones in the first phase soon after installation is over in August. The exchange with 4000 subscriber lines and the remaining trunk would be released for subscribers progressively thereafter.

Mr Meemansi said the first model of a 5000 lines large exchange for use at Delhi Cantonment was scheduled for delivery from the Bangalore factory by April 1989.

Mr Meemansi said as per the present plan the ITI and C-DOT hope to commence bulk manufacture of 16000 P exchange in the ITI factory by end of 1989.

It is expected to deliver 0.5 lakh lines of the large exchange during 1989-90 which could be further increased to three lakh by 1990-91 and five lakh by 1992-93.

Mr Meemansi said this schedule of supplying large exchanges was in line with the demand for switching equipment during the beginning of the eighth Plan period.

Additional manufacturing plants would be set up with C-DOT Technology for meeting the country's increasing needs, he added.

Referring to the other exchanges of the C-DOT family switching systems Mr Meemansi said the ITI was also setting up manufacturing facility of one lakh lines capacity for production of 128 P rural exchanges.

A pilot production of 100 exchanges had already commenced at the ITI/C-DOT model plant at the Electronics City near Bangalore.

ITI had planned to produce 400 such units during 1988-89. C-DOT, he said, desired to speed up the rate of production by three times during 1989-90.

He said apart from ITI, 13 State electronic corporations had been licensed by the Government to produce 128 P rural exchanges. The total licensed capacity so far was about 3.5 lakh lines.

Mr Meemansi said C-DOT's 512 P exchange was now undergoing satisfactory field trials at the Delhi Cantonment Exchange. To Date 180 subscribers had been connected.

He said 50 per cent of the subscribers were large users like Western Air Command, Indira Gandhi National and International airports which together saved about 500 extensions.

Mr Meemansi said because of these subscribers the average call attempt per line was around 18 calls during the busy hour as against the normal rate of around 10 calls.

He said there was demand from Cantonment subscribers to change over from the present 39 exchange to 548 C-DOT exchange. Additional connections would be released during the current month to load the C-DOT exchange to its full capacity.

Mr Meemansi said ITI was setting up a production plant of one lakh per annum capacity for manufacture of 512 P of C-DOT. This project had been sanctioned by the ITI board.

He said C-DOT was transferring the technology in advance so that production would commence during the last quarter of the current year itself.

Mr Meemansi pointed out that the 512 P exchange accounted for 90 per cent of the hardware used in the large exchanges. Similarly the software used covered 90 per cent of the total software in large exchanges. The executive director said C-DOT technology developed for appropriate Indian conditions of extreme environments was ideal for transferring to developing countries. A Bangladesh delegation was presently studying it for adaptation in their country.

He said the solutions provided by the technology were cost-effective with emphasis on capital sensitivity and labor-intensiveness. Besides, development costs were much lower in view of the huge skilled manpower available.

07310

#### **Details of Plans To Expand Radio, Television Services**

5550129 New Delhi PATRIOT in English  
24 May 88 p 5

[Text] The number of television programme producing centers will rise to 48 by the end of the seventh Plan, Information and Broadcasting Ministry secretary Gopi Arora said in the Capital on Monday, reports UNI.

Inaugurating a two-day meeting of State information secretaries and directors of information, Mr Arora said the main emphasis during the seventh Plan would be on providing television service to populous areas.

The effort now is to cover remote, sensitive, hilly border and tribal areas, and a number of schemes had been formulated towards achieving this objective.

Mr Arora emphasized that communication in its various forms should play a more effective role in the socio-economic development of the country.

Referring to the introduction of unmanned solar powered transmitters in the TV network, Mr Arora pointed out that with deployment of these transmitters in the Lakshadweep, Andaman and Nicobar Islands, it would be possible to cover almost the entire population of these islands in a year or so. He said that it was also proposed to cover those shadow areas which did not receive TV signals of the neighboring transmitters by deployment of 'transposers.'

He said that the Government was committed to introducing regional service in each State. The regional service has been introduced in Maharashtra and Andhra Pradesh by providing satellite linkage between the studio centers at the capital and the transmitters operating in the States concerned.

Similar facility would be provided in Orissa and Karnataka when INSAT-IC is launched and operationalised some time this year. Substantial areas in West Bengal and Tamilnadu had been provided regional service through microwave link.

Referring to enormous progress made by All India Radio during the last three years, Mr Arora said four local stations have been set up as forerunners to 73 FM local radio stations coming up in the seventh Plan. A 50 KW SW transmitter has been set up in Shillong as a part of the integrated service for the north-east. A 1000 KW transmitter has been established at Nagpur for taking up

broadcasts on the national channel and programme production facilities have been established at the Jawaharlal Nehru Stadium in New Delhi for the national channel programme.

07310

#### **Businesses Seek Improvement in Telecommunications**

##### **Deregulation Ruled Out**

55500122 Calcutta THE TELEGRAPH in English  
13 May 88 p 8

[Text] The adviser to the Prime Minister on technology missions, Mr Sam Pitroda, has ruled out the possibility of any deregulations in the telecommunication sector.

Replying to a point made at a meeting of the Coimbatore chapter of the Indian Chamber of Commerce and Industry here last night on the need for setting up a modern telephone system on a cooperative basis, he said though the country's telephone system was "obsolete," the complexity of the problem and the enormity of the issues involved, particularly in a developing society like India, had to be taken into consideration.

He said even with the best technology on hand, it was not possible to solve the problem by permitting subscribers' cooperatives to set up their own exchanges.

Stating that the task of the Centre's telecom mission was to build over the next five years a "national, viable, solid digital network," which can provide a "reasonable connectivity" where everybody gets to everybody else in a reasonable period of time, Mr Pitroda said "connectivity requires standards and standards presuppose monopoly."

Even in the U.S. telephone system, deregulations were introduced only in 1984, he added.

He said the problem would not be solved by a change of equipment or fixing a new exchange. "The black phone is only the beginning of the problem," he quipped. Behind it lay hundreds of technologies that had to be integrated in an efficient and viable network, which also required retraining telecommunication personnel and "retooling our industry."

Another problem faced by the country was that of very high traffic owing to a low telephone density which was not the case in developed countries in the West, he said.

Mr Pitroda said for the first time a clear-cut telecommunication programme till 2000 AD had been articulated, documented and a consensus evolved. The Centre for Development of Telematics (C-DoT), which was set up in 1984, was developing a system that worked in our conditions.

He said there was a proposal to set up a telecom commission. The structure as it existed now was not designed to deliver all that the people wanted and hence the need for "parallel systems of delivery." He sought the cooperation of businessmen in implementing the Centre's five technology missions, on which Rs 5000 crores was to be spent in the next two years.

He said it was regrettable that an impression was being created that business was not something positive. Observing that during the days of the freedom struggle, the partnership between business and leadership was very strong, he said business was then respected and leaders were proud of their association with businessmen.

### **Study on Policy, Progress**

55500122 *Calcutta THE TELEGRAPH in English*  
13 May 88 p 8

[Text] Private participation in the telecom sector is necessary to revamp the telecommunication network, according to a study by the Federation of Indian Chambers of Commerce and Industry (FICCI).

The study titled "Telecommunication—Policies and Progress" suggests that the private sector be allowed to manufacture switching and transmission equipment without any limit on equity holding. The stipulation at present is that 51 percent of share holding should be with either the Centre or any state government.

Pointing out that the present telecom policy envisages only a limited role for the private sector, the study calls for broadbasing its participation.

Broadbanding can be resorted to wherever possible. For example, C-DoT EPABX licence, at present, is only for 128 port electronic PABX to C-DoT design. The rural

automatic exchange (RAX) designed by C-DoT is identical in design to the EPABX. Therefore, broadbanding of the licence of EPABX and RAX could be allowed. Also, key-phones, smaller sizes of EPABX and a host of other items can be broadbanded to ensure economies of scale.

The study suggests that an institutional framework could be set up to ensure cost effective services to subscribers making use of the on-line data bases like Tradex and Infonet, which provide invaluable trade and other business information. The Indonet operated by the Computer Maintenance Corporation is priced high since the subscribers have to pay not only for the information but also for the international calls. The study suggests that the Department of Telecommunications or any other organization on its behalf, become a subscriber to these services and establish packet switching facilities to reduce the cost considerably.

/9738

### **PAKISTAN**

#### **Satellite Tracking Station Begins Operation**

BK0506125988 *Islamabad Domestic Service in English*  
1100 GMT 5 Jun 88

[Text] The satellite tracking station of the Pakistan Space and Upper Atmosphere [Research] Commission [SUPARCO] has gone into regular operation in Lahore. The SUPARCO chairman told Radio Pakistan's Lahore representative today that the station, which can track seven different types of satellites, is working satisfactorily. It can receive pictures of cloud cover both from polar orbiting and geosynchronous orbiting satellites. The SUPARCO chief said the tracking function by the station was expected to be augmented by a laser-cum-optical detector and photographing device in the next 3 months.

## EUROPEAN AFFAIRS

### France Telecom, Bundespost Form Subsidiary for Value-Added Services

#### Cooperation Seen As Key

55002461a Paris ZERO UN INFORMATIQUE in French 9 May 88 p 3

[Article by Francois Granon; first paragraph is ZERO UN INFORMATIQUE introduction]

[Excerpts] With a possible change of government only a few days away, France Telecom has announced a series of measures in a liberalizing direction: agreements with foreign operating companies, lower rates for firms, and an intensification of the "enterprise strategy." Is this a crowning touch or simply a step on the way?

The establishment by France Telecom and the Bundespost of a subsidiary under private law "to provide value-added services" has a highly symbolic value. For both operating companies, it is one more step toward deregulation of the European market. The agreement, which was concluded during a summit meeting of EEC ministers in Berlin, calls for establishment by the two government agencies of a joint subsidiary under private law to be based in the FRG and provided with "a significant amount of capital."

Its purpose remains vague: "providing value-added services" covers electronic document exchange between suppliers and customers (EDI) as well as the packet data transmission offered by TRANSPAC. It is not impossible, however, that international express service will be one of the first services offered. Standard X400, which regulates express services, is European in origin. And in France, TRANSPAC already offers an express service, known as Atlas 400, which meets that standard.

At the Ministry of Postal Services and Telecommunications, it is emphasized that the French-German company has an opportunistic future and "will make it possible to react very quickly to the opportunities that present themselves without being subject to bureaucratic sluggishness." Moreover, the company is authorized by its bylaws "to become a partner in existing entities or to buy shares in them."

Although the content of what it is offering remains imprecise, such a partnership is regarded by France Telecom "as a step of capital importance." An official at the ministry does not hesitate to express the hope that "France and the FRG will repeat in the telecommunications market the cooperation that has been worked so well for them in connection with the Airbus program."

As early as last November, the two ministries solved the irritating problem of mutual approval of the Minitel system and agreed on the "single window" principle

(single suppliers of transnational leased lines). A fundamental movement was thereby set in motion. Some people at France Telecom are saying clearly that they hope the EEC's operating companies will cooperate like the seven U.S. operating companies (the BOC's), with each providing pan-European service within its own territory.

#### Long-Distance Rates Down 6.5 Percent

The partnership agreement with AT&T that was announced at SICOB last week is a move in exactly the same direction as that mentioned above. More limited in scope, it simply extends to the United States the pre-ISDN [integrated services digital network] service already being marketed in France under the name of TRANSCOM. For the moment, therefore, it is aimed at only a few hundred firms.

The third important development of the week was the 6.5-percent drop in long-distance rates. France Telecom has been steadily reducing its rates—especially those applying to businesses—over the past 2 years. The deductibility of the TVA [value-added tax] (which amounts to a 16-percent reduction for commercial firms), the lengthening of the long-distance pulse rate (from 12 to 15 seconds), and, lastly, the 5-percent drop in the basic tax (from 0.77 to 0.73 franc) have combined to bring about a 45-percent reduction in the cost of long-distance calls (which are the kind used most often by businesses).

That rate policy will continue, according to France Telecom. Long-distance rates will continue to drop, while local rates will increase slightly. The goal is to remove the relationship between telecommunications costs and distance.

#### Details on Firm's Setup

55002461a Paris L'USINE NOUVELLE in French 11 May 88 p 50

[Article by Jean-Pierre Jolivet; first paragraph is L'USINE NOUVELLE introduction]

[Text] After years of stormy cohabitation punctuated by acute crises, France Telecom and the West German Bundespost are moving closer to each other. COGECOM, France Telecom's marketing subsidiary, and the Bundespost are on the verge of establishing a joint company in the field of value-added networks. A holding company, its purpose will be to set up specialized subsidiaries—possibly with other partners—and to buy stock in firms that already exist.

The two government agencies are making a show of their desire to open up a European space in that area. That is a soothing aim. But in fact, the growing threat of

unrestrained deregulation forced them to act quickly. A good number of private operators (IBM, EDS, Geis, and so on) are knocking on the doors of the European monopolies.

In France, IBM is piling on the pressure to get the Deregulation Commission to relax its rules governing value-added networks. Paul Zeboulon, director of telecommunications activities for IBM France, is not hesitating to call for truth in rates on the part of France Telecom and to propose partnerships with SSII's [data processing services and engineering companies] and the established operating company—provided that the latter is no longer both the judge and the judged.

That kind of talk bolsters the positions taken by officials at COGECOM. That wholly owned subsidiary of France Telecom feels that its status as a public-sector enterprise keeps it from living up to its commercial calling. "At a time when many alliances are being formed in the area of value-added networks, this agreement makes it possible for us to seek partners downstream from telecommunications," comments Yvon Le Bars, COGECOM'S chairman and managing director.

The partnership with the Bundespost is part of the new strategy it is developing through its subsidiaries (4.7 billion francs in 1987) with a view to becoming an international operating company in the field of telecommunications services. After failing, along with Telefonica, in an attempt to invest in the Chilean company CTC (the local telephone operating company), France Cables and Radio purchased 2 percent of the capital of Japan's ITJ, a new international operating company competing with the KDD. COGECOM, which has just increased its own capital by 150 million francs, foresees other European alliances identical to the one concluded with the Bundespost.

Across the Rhine, the event is a significant one. By joining with France Telecom, the Bundespost is making a breach in its hitherto jealously guarded monopoly.

On both sides of the Rhine, therefore, the time has come for realism. Rather than be left out, telecommunications officials are preferring to become the protagonists in the new game being imposed by the wind of deregulation—the better to control it.

11798

## BELGIUM

### Belgium About To Implement Pilot ISDN Network

5500a039 Groot Bijgaarden DE STANDAARD in Dutch  
23 Feb 88 p 13

[Unattributed article: "Rates for Belgian Pilot ISDN Project Fixed"; first paragraph is DE STANDAARD introduction]

[Text] Brussels—Mrs D'Hondt, PTT Secretary of State, has recently approved the rates for the pilot ISDN project to be launched at the end of this year. ISDN

stands for integrated services digital network and offers all existing and future telecommunications services on the same subscriber line: Speech, text, images, as well as computer data can be transmitted via this line.

The ISDN network can be achieved through the existing telephone network. For a so-called "basic access", existing telephone lines must be digitized and directly or indirectly connected to a digital exchange (via concentrators).

To digitize a subscriber line, a wall socket with a transmission device must be installed in the subscriber's home and a new line card inserted in the subscriber's digital exchange (or concentrator).

Basic access consists of two 64-kilobit per second channels (b-channels) plus a 16-kbits/s packet switched channel (d-channel), which can be used simultaneously or independently for transmissions to different destinations and for various services. By digitizing a traditional pair of lines three channels are obtained, with a capacity much higher than currently possible on such a pair through a modem (maximum 4.8 kbit/s).

The basic access connection rate will be 12,000 Belgian francs (about 2.5 times the normal telephone connection rate) with the subscription fee amounting to 4,700 francs per 2 months.

The salient fact regarding the new rates, according to a PTT cabinet announcement, is that speech as well as data can be transmitted between ISDN subscribers via the b-channels at a speed of 64-kbit/s, while the telephone rate is only 20 percent higher than currently.

According to the announcement, the rate is advantageous bearing in mind that the ratio between a 64-kbit/s speed and the current maximum telephone network speed of 4.8 kbit/s is more than 10, whereas the ratio between the rates charged is only 1.2.

However, for transmissions from ISDN subscribers to other subscribers the usual telephone rate remains applicable.

Besides basic access, there is also a so-called primary multiplex access with 30 b-channels and one d-channel which is mainly used to connect private exchanges in large corporations.

This pilot project aims to introduce the ISDN concept to both the public and industry. At its launch it will have a limited number of accesses: 720 basic accesses and 30 primary multiplex accesses, spread over three exchanges in the Brussels area. By 1990 ISDN will be commercially available throughout the country.

Since 1985, a number of ISDN tests have taken place: tests of four ISDN lines on a System 12 exchange of Bell Telephone in Waver providing telephone, packet

switched teletex, and telefax services; tests of ISDN lines on exchanges in Waver and Antwerp interconnected through the national 140-Mbit/s transmission network; and tests of two ISDN lines in Antwerp to which IBM was connected with 64-kbit/s terminals and test equipment. All of these tests were successful.

More details can be obtained free of charge by calling the green number 11.66.77 (number is valid nationwide, no area code needed).

25068

## FEDERAL REPUBLIC OF GERMANY

### Ground Monitoring Satellite System With France Proposed

55002456b Frankfurt/Main FRANKFURTER  
ALLGEMEINE in German 13 May 88 p 5

[Text] Bonn, 12 May—Proposals for a Franco-German satellite system for earth reconnaissance are being worked out in the Union party. It was confirmed to this newspaper by the CDU delegate, Ruettgers, who is the party reporter for space projects in the research committee. The recommendation is for a satellite system which is to be used for civilian purposes as well as for monitoring agreements on arms control. Ruettgers believes that a satellite of this type for earth observation could be realized most quickly by the FRG and France. Ruettgers, with support from the party, is demanding that both countries, but also the European nations as a whole, have their own independent access to a satellite system for civilian and military use.

The CDU research politician says that a Franco-German satellite system of this type for earth observation is in the interests of the FRG. The FRG had no opportunity to observe directly across borders to get a picture of changes in the environment and of disturbances or of investigating comprehensively how the Warsaw Pact countries were behaving militarily and in security policy. Other means of reconnaissance were no substitute for participation in a satellite. Ruettgers considers the information that the FRG obtains within NATO from U.S. reconnaissance satellites inadequate. He said that the data was selected to serve Washington's interests. For financial reasons alone, the conclusion from this for the Europeans could not be to imitate the U.S. systems in satellite reconnaissance. But they did need an independent capacity for civilian and military earth observation within the limits of their capabilities. As soon as they had it, cooperation with the United States would be necessary and would probably make Washington's information policy more open.

The CDU research politician points out that the technology for a high-powered satellite system exists in Europe. France, more than anyone else, has been carrying out independent satellite reconnaissance in Europe for years. Besides the civilian satellite Spot, development of the

military satellite Helios has started. In 1984, Paris brought up the topic of cooperation with the FRG on military reconnaissance satellites. The system is supposed to be ready for deployment in 1993. The FRG is to assume a 40-percent share of the estimated costs for the first 5 years of DM1.5 billion. At a summit meeting in 1985 the FRG expressed its opposition to this cooperative project.

9581/9604

### SPD Divided on Space Resolution

55002456a Frankfurt/Main FRANKFURTER  
ALLGEMEINE in German 7 May 88 p 5

[Text] Bonn, 6 May—"Breakthrough into the backwoods" was how the head of the German Society for Foreign Policy, Kaiser, described the "space resolution" of the SPD Bundestag parliamentary party in an article submitted to the SPD periodical VORWAERTS last Friday. The Social Democrat was criticizing the fact that at the beginning of March in a poorly attended session with 80 members present, 50 delegates from the parliamentary left had succeeded in pushing through their opposition to manned space flight as a resolution of the entire party of almost 200 members. In the important question of large-scale projects for manned space flight, the faction was (thus) opposing the government parties, and also almost all the other Western European nations who are members of the European Space Organization (ESA). The SPD was rejecting participation in the Columbus project because of the danger of military use. The fact of the matter was that the ESA, which included neutral countries, after extremely difficult negotiations with the United States, had reached an agreement about a plan for the use of the space station, which met with the approval of the neutral countries. "But the SPD apparently knows better."

"In reality we are dealing with a deep seated aversion to high technology," Kaiser wrote. In the coming century the only survivors will be those who are in control of high technology. The SPD was now generating for itself an "image of hostility to technology" that had been created by a minority. The "already poor relationship" between the SPD and the French Socialists would very probably be subjected to additional strain. If the "autonomy" of Europe, to which the SPD claimed allegiance, was intended seriously, Europe could not abandon the use of space to other powers, "otherwise we will end up with a Europe consisting of garden figurines." If a significant country like the FRG abandoned manned space flight, then that signified the end of an independent European role in manned space flight. The Laender with a Social Democratic government, Bremen, Hamburg and Northrhine-Westphalia, which wanted to expand space travel, were being attacked from the rear by the SPD. The decision was "not a historic deed to show the civil courage of the party leadership and the majority." Resolutions such as the statement on space would contribute to "prolonging their time as an opposition party."

9581/9604

**Postal Reform Criticized by CSU, FPD**  
55002460 Munich SUEDEUTSCHE ZEITUNG in  
German 13 May 88 pp 1, 2

[Article by Bonn Editorial Staff: "Persisting Criticism of Postal Reform"]

[Text] The dispute over reform of the Federal Postal Service continued unabated even after passage of the draft law by the Federal cabinet on Wednesday. A few hours before the cabinet session, the DGB had tried in vain to prevent the decision on the draft law through a temporary order by the Cologne Administrative Court. The appeal of the DGB against the negative decision of the court was rejected by the Supreme Administrative Court in Muenster. Federal Postal Minister Schwarz-Schilling, who termed the reform an important milestone on the road to creating optimal conditions for development and growth of telecommunications, characterized the attack by the DGB as purely a delaying tactic without factual background since, as he said, contrary to the claim of the unions, the reform package does not contain any basic changes in public service and salary law. He said he had agreed with Federal Internal Affairs Minister Zimmermann only on a few special separate regulations for the Federal Postal Service which would have no effect on other areas of the public service. He said this had to do exclusively with loosening up the salary system in certain areas of the Postal Service in order to facilitate attracting qualified personnel.

The draft law provides for dividing the Postal Service into independent enterprises—postal bank, postal service, and telecommunications—as well as reduction of the Postal Service monopoly. Schwarz-Schilling said that the first reform steps could probably be introduced at the start of 1989. The minister emphasized that reform is necessary because the challenges of the future development of the information and communications services could not be mastered with the traditional structure of post and telecommunications. With the Postal Service as the sole provider of services all marketing requirements cannot be properly fulfilled. In sum, it is expected that the competitiveness of the German economy will be ensured through more market-economy solutions. For Postal Service customers, the reform initially means only that the Postal Service will gradually install standardized wall plugs for all types of telephones. This conversion is expected to be completed for all Postal Service customers by the middle of 1990. The minister said he would make decisions on which services of the Postal Service are to be offered in competition with private enterprises at the earliest 1 or 2 years after the reform goes into effect.

As usual, the reform is disputed not only by the trade unions and the Bonn opposition parties but also within the coalition parties. While, for the CDU/CSU parliamentary group, Deputies Hansheinz Hauser and Gerhard Pfeffermann praised the postal reform law as a

"logical total concept," the parliamentary director of the CSU regional group in Bonn, Wolfgang Boetsch, called for an "improvement" of the draft during the course of parliamentary deliberations. Before the law goes into effect, he said, the so-called obligatory services of the Postal Service in the areas of telecommunications, letter and package service must be legally established. There must be no "big deal," he said, by private postal competitors who would be a burden on rural areas.

The Free Democrats, according to their postal policy spokesman, Rainer Funke, view the draft law as only a "halfhearted and hesitant step" in the direction of a sweeping postal reform. The FDP, he said, would work during the parliamentary deliberations to make sure that existing opportunities for an opening up of the German telecommunications market are really used and that the reform is not watered down further during the enactment process. The centralized organization for postal and telecommunications affairs under a state monopoly is a "fossil which is unique in the world," said Funke.

The chairman of the parliamentary postal affairs committee, Peter Paterna (SPD), criticized the reform as a "totally shipwrecked" venture. He said the draft law introduced by the minister was fixed by "his own cabinet colleagues" in such a way that it would make the Postal Service not more flexible but more immovable. The deputy of the Greens, Ulrich Briefs, charged that nothing had changed in the "longstanding sell-out of the Federal Postal Service to the business interests."

Several thousand members of the German Postal Trade Union (DPG) have held protests in numerous cities against the planned division of the Postal Service into three independent enterprises. The DPG chairman, Kurt van Haaren, declared that the citizens' Postal Service is going to be "smashed and looted."

13455/9604

## FINLAND

**Government's Telecommunications Chief on Privatization**

55002453 Helsinki HELSINGIN SANOMAT in Finnish  
3 May 88 p 41

[Interview with Telecommunications Chief Pekka Tarjanne by Teemu Luukka]

[Text] Managing Director Pekka Tarjanne of the Postal and Telecommunications System is full of enthusiasm. At the beginning of next year, the system he directs will change into a business establishment reminiscent of a state-owned company.

Tarjanne intends to guide the 350-year old Postal and Telecommunications System toward developing into "a business concern in the true sense of the word". The establishment of affiliates is being planned on the postal



as well as the telecommunications side. The plan is to separate some sections of the postal service and bus transportation, among other things, from the parent company.

A week and a half ago, the government submitted a bill to parliament for changing the Postal and Telecommunications System into a state-operated business concern. According to the proposal, Tarjanne along with his staff would to a large degree independently determine wage policy and investments.

The Postal and Telecommunications System would also partly determine the pricing of services. The state would keep for itself the right to regulate the prices of a first class letter, newspaper services supported from public funds, and local telephone connections.

Allowing the Postal and Telecommunications System to enter the free markets would still have been too daring a decade ago. The postal service earned a meager income even though prices were, relatively speaking, considerably higher than they are now.

Productivity has improved from year to year even though it is still far behind the productivity figures of Sweden's postal service. Indeed there are only a couple thousand post offices in Sweden or a thousand less than in Finland.

The Ministry of Communications is currently considering the fate of unprofitable post offices. According to the bill before parliament, the state will compensate the Postal and Telecommunications System if it has to serve the public on an unprofitable basis.

The number of postal personnel has not increased in 7 years, but income has increased from approximately 3.5 billion to more than 7 billion markkas.

The Postal and Telecommunications System is the country's largest employer. Of its 45,000 employees, one-third works on the telecommunications side and the remainder is employed in postal operations. The problem at the postal service is the one-sidedness of the cost structure: 87 percent of expenses in the postal service resulted from the labor force.

Tarjanne says that becoming a business concern will not mean layoffs, personnel will be reduced only through normal attrition.

The surplus in the Postal and Telecommunications System was 921 million markkas last year.

**HELSINGIN SANOMAT:** More money than ever before was collected from postal operations last year. The surplus was 130 million markkas. Then why are prices being raised again, Postal and Telecommunications Chief Pekka Tarjanne?

**Pekka Tarjanne:** Postal operations produce a hundred million in profit from a 3.5-billion business volume. From a statistical point of view, this cannot be considered a profit that is easily obtained. There are a several hundred countries in the world but not many postal services which registered a profit can be found. The increase in prices is a result of the fact that postal operations represent an exceptionally labor-intensive area. If wages increase 10 percent, our productivity does not increase 10 percent in a year.

**HELSINGIN SANOMAT:** Do you believe that the Postal and Telecommunications System's productivity will improve operations so much that prices can be reduced?

**Pekka Tarjanne:** If we are able to use our size as a strategic competitive factor and continue to make our operations more flexible, I seriously believe that this will begin to appear as a more advantageous price development for the client. On the telecommunications side it will be very easy to promise a continuing reduction of prices.

**HELSINGIN SANOMAT:** Years ago you said that long distance calls will decrease in price at an annual rate of 10 percent. The reduction was 10 percent in 1986, 8 percent in 1987, and at the beginning of this year it is only 6 percent. Why?

[Answer] We have proposed a somewhat faster reduction of prices as far as long-distance calls are concerned, but the state has not agreed to this. We have, however, reached a point in which our long-distance prices are half as much as they were 10 years ago.

**HELSINGIN SANOMAT:** You have said that prices could not be decreased 10 percent more in a year since the long-distance network will otherwise become jammed. What is the degree of overloading in the long-distance network at this time?

**Pekka Tarjanne:** Our goal is that at the most 3 percent of the companies will fail due to technical reasons. Only 2 percent has failed in Sweden. We are approaching 4 percent. There has simply not been enough investment put into the long-distance network.

**HELSINGIN SANOMAT:** How much of its surplus will the Postal and Telecommunications System have to turn over to the state?

**Pekka Tarjanne:** It will be around 500 million markkas at least in the beginning. This is a joint decision and it can be considered as quite natural. Indeed the state should receive interest on its invested capital. An interest rate of 15-20 percent is completely reasonable in such a high-tech area.

**"A Concern in The True Sense of The Word"**

**HELSINGIN SANOMAT:** Do you intend to split up the Postal and Telecommunications System into affiliates? In what areas do you intend to establish international or national affiliates?

**Pekka Tarjanne:** Some secrets must be kept. Some have been made public and from them one can obtain a picture of what the question is all about. The best example with respect to the postal side is the Company of European Postal Administrations based in Brussels, which competes in the area of postal services. At home it is quite possible in the future that segments will be separated into incorporated stock companies. The trend is more in this direction than to the contrary. Indeed a business concern in the true sense of the word will gradually come about from this. Natural splintering, not any kind of revolution.

**HELSINGIN SANOMAT:** What kind of an investment ceiling is the state stipulating?

**Pekka Tarjanne:** This is not yet known; it will be determined annually in advance. Now our total investment is a little less than 2 billion markkas. An optimum investment level would be 300-350 million more than at the present time.

**HELSINGIN SANOMAT:** It will be possible for the Postal and Telecommunications System to take out loans from the free markets, with which you can partially fund investments. What criteria is the state using to justify its investment ceiling?

**Pekka Tarjanne:** As in any firm, the owner feels a need to control and this was an opportunity for the political decisionmakers to influence and control the development of the company.

**HELSINGIN SANOMAT:** How large do you believe your need for indebtedness will grow?

**Pekka Tarjanne:** This firm will not go bankrupt because of interest expenditures. It will be in the millions, but certainly not in the billions.

**"We Can Threaten To Place An Embargo on The NMT-450"**

**HELSINGIN SANOMAT:** The mobile telephone network is the most overloaded at this time. Did the popularity of mobile phones come as a surprise?

**Pekka Tarjanne:** It came as a surprise to all the Nordic countries. It is of small comfort that our situation is slightly better than in the capital cities of the other Nordic countries. An embargo has already been put into effect in Stockholm. We have considered this also, but it has not yet become necessary. We can, nevertheless, threaten to place an embargo on the NMT-450 for new

customers so that the older customers could have some kind of service. Unless the new customers purchase the NMT-900 or the older ones transfer to it, we will be compelled to adopt ever more radical measures.

**HELSINGIN SANOMAT:** This telecommunications reform includes plans by which the state will continue to keep the right to determine the most important prices and affect investments. Is this sufficient?

**Pekka Tarjanne:** This is a good step forward. I would have been ready to accept the responsibility for more.

**HELSINGIN SANOMAT:** What would you have wanted in addition?

**Pekka Tarjanne:** We would have wanted something approaching the operational independence of a stock company. This would give us more authority to determine pricing, among other things. But this is not a major problem. The legislation implementing this reform is not permanent. There will be additional progress in the 1990s.

10576

**Vistacom Plans World's First Video Phone Series Production**

*55002458 Stockholm DAGENS NYHETER in Swedish  
11 May 88 p 16*

[Article by Stefan Lundberg, DN Helsinki correspondent: "Series Production of Video Phones"; first paragraph is DAGENS NYHETER introduction]

[Text] Helsinki. Finnish manufacturers are not lacking in self-confidence these days. Little Vistacom with 10 employees in Esbo intends to be the first company in the world to begin series production of video phones next fall. Vistacom is aiming at an enormous market. Hundreds of thousands of video phones will be sold in Europe in the 1990's.

Vistacom claims to have succeeded where many of the industry's giants have failed. They have found a simple and brilliant method which gives a good picture with a small apparatus.

**Secret**

The new product is being shown at a trade fair in London. Until last Monday the apparatus was a well-guarded secret. Vistacom has succeeded in getting a patent for its invention in the United States, and has applied for one in Japan.

Briefly, Vistacom's method is based on sending out as little information as possible over the telephone network. The background of the picture is stored in advance

in memory. It is necessary to reduce the amount of information, since the video phone picture is transmitted on the telephone channel.

### Breakthrough

A TV picture would require a thousand telephone channels. That means that only 15-20 percent of the picture supplied can be sent during the conversation, otherwise, it would be just a porridge of everything. That is what the people at Vistacom now believe they have solved.

The leaders of the company revealed that several of the giants in the industry have offered their cooperation, but the company responded with "No, thanks," because "Vistacom has nothing to gain through such cooperation." Among other things the company maintains that a giant Japanese firm is standing by "with its thumb in its mouth" considering video phones.

Vistacom has its roots in the National Technical Research Central. The firm was founded a couple of years ago by some engineers who investigated video phones at the research central. As a prototype there is the successful Mobira, which quickly broke through internationally within the NMT telephone industry.

Vistacom estimates that the apparatus will cost about 100,000 kronor when it comes on the market. So far they have only produced three handmade copies.

9287

## FRANCE

### National Telephone Network Adapted for Future Digital Services

55002461b Paris ZERO UN INFORMATIQUE in  
French 25 Apr 88 p 35

[Article by E.S.; first paragraph is ZERO UN INFORMATIQUE introduction]

[Text] Synchronization of the French network is now complete. Moreover, the introduction of Code 7 signaling by semaphore channel is well under way. These developments are a prerequisite for bringing the ISDN [integrated services digital network] into general use and should make it possible to ensure the quality of service by contract.

Since the start of the year, the French telephone network's 1,100 TDM switching centers and 60 transit exchanges have been operating in perfect unison to within one-thousandth of a billionth of a second. France Telecom is the first operating company in the world to have completed the synchronization of its network with the accuracy of  $10^{-11}$  recommended by the CCITT for the interconnection of national digital networks. The operation involved an investment on the order of 120 million French francs.

The need for that synchronization originated in the generalized use of pulse-coded modulation (PCM) techniques and TDM. Those techniques make it possible to transfer any kind of information in a digital stream at 64 Kbps, but they can also cause errors if the timing of the time switches is off.

Any offset results in switching errors, telescoping, and the loss of binary digits. That loss makes little difference as far as telephone conversations are concerned, but on the other hand, it is very troublesome in the case of data transmissions.

### Transmission Quality Guaranteed by Contract

The purpose of synchronization is therefore to prevent slip due to a difference in frequency between the link entering a communications node and that node's local clock. It is also a matter of permitting the direct interchange of digital data (digital connection) on the digitized network.

The solution chosen by France Telecom and the CNET [National Center for Telecommunications Studies] involves controlling the network with a master clock. The switches are synchronized using reference frequencies delivered from two groups of cesium and rubidium atomic clocks that have been set up in Paris Saint-Amand and Lyons-Sevigne. Actually, the arrangement consists of seven atomic clocks which operate simultaneously and constantly compare their timing among themselves and with the station in Allouis.

The reference frequencies are distributed by a part of the general network that consists of digital paths operating at 2 Mbps. That network feeds digital network synchronization units (USRN's) which control the time bases of the TDM exchanges.

### Four-Level Synchronization

Those time bases, consisting of thermostated quartz oscillators, are the internal clocks at the exchanges. They control the timing of operations by those exchanges and the subordinate transmission equipment.

Synchronization is not distributed to all the switches directly; instead, it is structured at four levels in keeping with the hierarchy of the telephone network. In that architecture, each switch at a particular level is connected by two links to the higher level, and a third link is established with a neighboring switch at the same level to constitute a chain. Thus the USRN's are always controlled by three different links.

### Synchronization Improves Transmission Quality

Synchronization's advantages are far from negligible. It has already led to the opening of the TRANSCOM network and a noticeable improvement in the quality of data transmissions, particularly videotex.

The overall result is that in a 2-Mbps link, only one frame is skipped every 70 days. That level of reliability may soon lead France Telecom to offer contracts guaranteeing a minimal transmission error rate.

Synchronization is an essential step in the network's development toward the ISDN. But it is not the only one. The introduction of CCITT No 7 signaling by semaphore channel is just as important. The result will be the setting up within 4 years of a genuine network (64 Kbps) dedicated to information interchange between switching centers. The investment is estimated at 1.65 billion French francs.

The first network, limited to six switching centers in the Ile-de-France region, went into operation at the end of 1987 and will be extended to Lyons and Marseilles in mid-1988. Putting Code No 7 into general use will take 3 years. The semaphore link will be completed at the end of 1989. By the end of 1991, three out of five subscribers will benefit from the advantages of enhanced signaling when making 60 percent of their calls.

11798

## NETHERLANDS

### Interview With Philips Manager on Future of D2-MAC, HDTV

55002462 Duesseldorf VDI NACHRICHTEN in German 15 Apr 88 p 18

[Article "Two-Tracks into the Digital Television Age"]

[Text] Decided improvements both in sound and in picture quality—these are the attributes of TV broadcasts in the 90's. In this connection, D2-MAC is the European intermediate step towards high definition television. This is the conviction of Guenter Kroll, Manager of Central Engineering of Philips GmbH, and in this function presumably a participant in the development of D2-MAC. The non-functional TV satellite TV-Sat 1 should help D2-MAC [Multiplexed Analog Components] to make a breakthrough, but now, as before, the standard stands under the sign of European and international disagreements.

VDI NACHRICHTEN: Did D2-MAC die with the demise of TV-Sat 1?

Guenter Kroll: No, not at all. We regret that the start of the TV-Sat 1 satellite went wrong. But this difficulty gives us time to think about our preparations once again more intensively, to start experiments, so that we will have our receivers ready in a tested version when the D2-MAC transmissions actually take place.

VDI NACHRICHTEN: In Europe, there are also the systems C-MAC and D-MAC. What does this competition look like?

Guenter Kroll: The component situation, which also was somewhat uncertain for a time for D2-MAC, in the meantime has cleared up. The decoder chip manufactured by Intermetall Company is now okay. We therefore can enter device production and testing with deliverable chips. This decoder is especially designed for D2-MAC. Its specification is based on an agreement between France and Germany (by the government) to use D2-MAC, first of all because D2-MAC is well-suited for satellite transmission and secondly because it can also be very easily fed into cable systems. C-MAC is currently still being preferred by Scandinavia, and this presents rather severe difficulties. D-MAC is a later solution, because the English in the meantime have also recognized that C-MAC is not the ideal transmission form for cable. For this reason, a variant with another type of modulation, but with a C-MAC format, has been proposed, and this is D-MAC. Thus, there is D2-MAC, where we have a data transmission frame of 1.5 mbit/s, with a clock frequency of 10.125 MHz. With C-MAC, the data frame can transport 3 mbit/s, with a clock frequency of 20.25 MHz. The special modulation type for C-MAC, however, does not fit into cable. For this reason, D-MAC uses the same data rate as C-MAC, but the modulation type is that of D2-MAC.

We are convinced that in any case we will start with D2-MAC as planned. Perhaps other European countries will join us when we have the appropriate units on the market. Naturally it is possible to build a decoder that can handle D2-MAC as well as D-MAC. But naturally this will be more expensive than the D2 chip. For D2-MAC transmission, a manual with operating instructions for the decoder and with a suggestion of how to feed it into the cable has already been very perfectly worked out, so that we do indeed have a healthy technical lead.

VDI NACHRICHTEN: Do you believe that with the television satellite Astra there will be several MAC systems in parallel?

Guenter Kroll: As I have already said, at the moment we are concentrating on D2-MAC. As far as I know, Astra is also very interested in D2-MAC, because it is a very efficient solution for the transmission problem. Naturally, it would be conceivable that the English will propose D-MAC for Astra, but then there also have to be receivers for this. Since Astra is a purely commercial satellite, a practical solution will surely be chosen, for which receivers are also on the market. In addition, Astra would like some of its transmissions to be scrambled (coded). This is certainly important for suppliers with product-oriented programs. The D2-MAC standard can readily be scrambled. It is also possible to transmit code words simultaneously, so that various regions can be cleared along the transmission path. This means that advertising which is permitted only in Germany will also be received only there. Astra is very interested in this, and for this reason we think that there they will have a preference for D2. But of course, we have to bring devices on the market.

VDI NACHRICHTEN: Do you expect that the devices will then also be available?

**Guenter Kroll:** Yes. That's what it looks like. The decoder is ready. We could now start directly with production. Naturally, this is not justified at this time, because the market isn't there. Since the TV-Sat 1 went wrong, we have to wait until a satellite is successfully positioned, which will then transmit at least four programs. Only then can I get customers.

One more thing on this point. The generation of the TV-Sat 1 is not old-hat, as has been written so often. Rather it is a highly modern satellite with a technology that others would be ecstatic about if they had it available. The report that this satellite's generation is outmoded is incorrect: If we really wish to achieve good picture quality on earth, we require transmission powers in excess of 100 W, especially if we wish to work with antennas with a diameter no greater than 90 cm. All statements that one can obtain good picture quality with a 60 cm antenna diameter and a smaller satellite power than with Astra, have to be understood in the sense that this is not guaranteed for the entire time. If there is heavy rain or snow, the picture will break apart. And even in the normal case there are pictures in boundary regions which would be evaluated not as good but only as satisfactory. The basic idea is that satellite television, and the introduction of D2, is supposed to produce better pictures and better sound. It is therefore wrong to save on antennas only to throw away the extra performance.

VDI NACHRICHTEN: What role does D2-MAC play on the path towards high definition television (HDTV)?

**Guenter Kroll:** In Europe, we have set as our objective to introduce with D2-MAC a satellite standard that will establish itself in the hardware. Then an HDTV standard, that we will transmit later on will also be received with D2-MAC devices that are already on the market; and indeed with acceptable picture quality. That would be about the same situation as with the transition from black and white to color. The transmission from HD-MAC should therefore remain compatible with D2-MAC receivers.

VDI NACHRICHTEN: There have been recent reports from Japan that they are trying to establish on the market interim solutions on the path towards HDTV. If this is true, isn't Europe losing time?

**Guenter Kroll:** No, I would say the exact reverse is true. With the interim solution to HDTV, we are much more advanced than Japan. We have contractual agreements between Germany and France, we have a decoder ready, we have TV units in preparation, we have manuals for operation and for test signals. In working teams with the broadcasting institutions, the Federal Post Office, and industry, we have clarified what can be done. According to my knowledge, such things have as yet not been

worked on at all in Japan. This means that D2-MAC is our first European step towards HDTV. And in this connection, we are far ahead of Japan.

VDI NACHRICHTEN: What advantages does D2-MAC have as compared to the Japanese developments?

**Guenter Kroll:** D2-MAC fits into our 50 Hz landscape area. That means we have millions of sets with 625 lines and 50 Hz picture refresh frequency operating with a line jump of 2:1. With an attachment unit, I can expand all existing television receivers so as to receive D2-MAC. As far as I know, there are no practical preparations for the Japanese preliminary solution to HDTV, called Extended NTSC. We, in Europe, on the other hand, later on wish to offer HDTV compatible with our D2-MAC system. This means, I really believe, that in this point we are much much further ahead than our dear Japanese friends.

VDI NACHRICHTEN: Would you please explain briefly the differences between the European HD-MAC system and the Japanese Muse proposal?

**Guenter Kroll:** At this time, there are two proposals for an HDTV production standard. One is the Japanese proposal of NHK, the Japanese state broadcasting company, for a system with 1125 lines, 60 Hz, and 2:1 line jump. The necessary video bandwidth with this production standard is about 25 MHz. On the other hand, there is the EUREKA proposal of 1250 lines, 50 Hz, and a line jump of 1:1, that is progressive picture scanning. This yields a video bandwidth of 50 MHz. The Europeans have made this proposal because they think that progressive picture scanning is better in the definition of motion and furthermore that other standards can be derived therefrom without any impairment of quality. We could derive a standard of 1250 lines, 50 Hz, 2:1, or also directly 625 lines, 50 Hz. In the line sequence and in the picture refresh frequency, you can already see 1250/1:1, 1250/2:1, 625/2:1. This means that we can keep the infrastructure of existing units, as far as the deflection technology and the picture tube technology is concerned, which indeed cost the most money, and we only change the transmission scheme.

The Japanese allow a break to occur there. With them, one has to convert between 1125 lines/60 Hz and 525 lines/59, 94 Hz, which is not quite so simple. Furthermore, the entire film shooting technology in the world operates with 24 pictures per second. And this can be transformed into a 50 Hz or 25 pictures per second television standard much more easily than into a 60/30 Hz standard. To this must be added that the studios of the European broadcast institutions are set up for 625 lines or 50 Hz. If, during production, one is to convert every time from 60 Hz to 50 Hz, this presents great difficulties. But among the broadcasting institutions, the insight is also establishing itself that this standard, proposed by EUREKA, and supported by the postal administrations of various countries is really not so

upside down. Especially, if we start from the idea that already now we are building our television sets at 100 Hz, free of flicker, with electronic memories. This is something that in the future will certainly become established.

We wish to hold fast to 625 lines for the transmission path of our HD signal. This yields a compatible transition from 1250 lines in production to 625 lines in transmission. This is the difference between Muse and the European proposal.

VDI NACHRICHTEN: From the point of view of efficiency, a future decision concerning which system is supposed to be introduced should be made entirely according to technical perspectives. How great do you think is the danger that other motives, such as economy, or nationalism, will oppose joint action both in the European area and world-wide?

**Guenter Kroll:** Well, economic reasons I would also consider as technically based. Nationalistic reasons certainly should not play a role in a decision of this magnitude. At this time, we have two proposals: the Japanese proposal of 1125 lines/60 Hz and the European proposal of 1250/50 Hz. These two production standards will probably remain.

I do not believe, and there we strike a little bit on nationalistic thinking, that the Japanese at the present time are ready to follow us Europeans along the path of 1250 lines/50 Hz (progressively) although they too think that this standard is technically better. However, I do not believe that agreement will come to pass; for this they have already put too much money into this development. In the CCIR [Committee Consultative International Radio Telecommunication], there will be recommendations, on the one hand, for the Japanese proposal that is partly being supported by the American side, and on the other hand for the European proposal, such as we have discussed. One has to be a realist here. The conversion from the Japanese proposal into an American standard is possible. But, from 1250 lines with progressive scanning one can also go over to a 60 Hz HD standard without loss of quality; this is precisely the advantage of the European proposal. So one has to await how the world develops.

From a present perspective, it appears that CCIR will not arrive at a uniform decision. For this, the positions of the interested parties are too different. And since the CCIR only issues recommendations, one can expect that both recommendations will be underwritten. But this, too, is already progress, because then at least we will have only two standards and not six or ten as is the present case.

## NORWAY

### Telecommunications Agency Chief Backs Increased Privatization

55002459 Oslo AFTENPOSTEN in Norwegian  
10 May 88 p 47

[Article by Kjell Aaserud: "Telecommunications Agency Offers Services of Increasing Value: Sharper Competition"; first paragraph is AFTENPOSTEN introduction]

[Text] The Telecommunication Agency is sharpening the competitive knife. Now the monopoly organization will throw its full weight into something called Value-Increasing Services (VOT). But the competition will take place on the same terms, emphasized Managing Director Kjell Holler in a press conference on Monday. Crisis subsidies will not be granted. The Telecommunications Agency has gradually become a company with significant earnings. Last year it had a surplus of 1,052 million kroner from an operating income of 14.4 billion kroner.

An expert group has studied the question of VOT under the Telecommunication Agency's direction. The majority (6) approved of it, while the minority (1) believed that the Telecommunication Agency should not be concerned with it, and that eventually the different services should be replaced by their own companies. Managing Director Kjell Holler does not believe it will cause political problems to bring about a broad entry into VOT.

### Almost No Limits

"The management of the Telecommunication Agency approves of further liberalization of the telecommunication sector in Norway," said Holler. VOT is a significant growth area. Furthermore, we have conducted VOT for many years through, for example, number information, telephone awakening, etc. Digitalizing of the network puts almost no limits on the possibilities of receiving, processing and relaying information.

Holler said that VOT is services which increase the value to the user of information and data on the public telenet. Examples are electronic payments, extraction of information from databases and relaying reports. Merging of telecommunication and data technology is moving swiftly, and is leading to user-oriented solutions which make it more difficult to draw clear boundaries between the different participants' activities. The EC believes that the national telecommunication agencies should compete for these services. Circumstances, competitive regulations, technical standards and borders must be in harmony with European countries both within and outside the EC.

### Not Everything Can Be Separated Out

The organizational accomplishment can be carried out in several ways, including setting up stock companies. But not everything is well suited for stock companies.

That applies, among others, to Centrex, a solution whereby the customer, instead of creating his own home central, can accomplish the same thing by subscribing to a part of the closest public central. That lightens the customer's investment expense, at the same time as he avoids investing in something that he will not need until far into the future. Accounting for such activity, which falls in the network of the Telecommunication Agency, must take place in the Telecommunication Agency.

"We can look after the value-increasing services for all customers, regardless of size and location," emphasized Holler. He said that renting of home central capacity would be most profitable for small- and medium-sized businesses. "VOT will not go beyond the basic telecommunication telenet. Nor will VOT give large gains over the short term, but over the course of 5-10 years it will be able to show significant growth. But above all the customer will be served by our participation in the competition," he said.

In addition, it was announced that the tempo of growth for VOT in the U.S. is formidable. During the first quarter of next year subscribers to Teledata will get the telephone book on their screens.

#### The Universal Net

Technical Director Ole-Petter Hakonsen explained the possibilities of our telenet, also designated by the Telecommunication Agency as the universal net, or the all-in-one net. The transmission capacity is formidable. The goal is to make Norway one of the foremost telecommunications countries in Europe by 1995. The forward thrust has begun. The most important thing is that

the net can transmit all types of services. Digital technology has a number of advantages, such as quality, capacity and price. Norway is one of the countries which has the largest digital share in the near net. Only France is ahead. In the longer term, special nets will be superfluous.

ISDN (Integrated Services Digital Network) will have all telenet services built in, so to speak. A time plan for this has been prepared which will be tested this year, a pilot project next year, in 1990 a pilot project with the largest users, and in 1992 the Telecommunication Agency will be able to offer an approximately nationwide proposal.

9287

#### TURKEY

##### Viewers Outside Channel-2 Area Watch Soviet TV

55002467 Istanbul *TERCUMAN* in Turkish  
13 May 88 p 3

[Text] Igdır (TERCUMAN)—Even though TV-2 is watched throughout a large part of Turkey, eastern Anatolia is deprived of this pleasure. Residents along the borders, in particular, watch Russian television in the absence of TV-2.

Some residents of Igdır who watch Russian television with the help of a person who knows the Russian language say, "None of our programs is bad. We just watch Russian TV because we cannot get Channel 2."

8349/9274

10

This is a U.S. Government publication. Its contents in no way represent the policies, views, or attitudes of the U.S. Government. Users of this publication may cite FBIS or JPRS provided they do so in a manner clearly identifying them as the secondary source.

Foreign Broadcast Information Service (FBIS) and Joint Publications Research Service (JPRS) publications contain political, economic, military, and sociological news, commentary, and other information, as well as scientific and technical data and reports. All information has been obtained from foreign radio and television broadcasts, news agency transmissions, newspapers, books, and periodicals. Items generally are processed from the first or best available source; it should not be inferred that they have been disseminated only in the medium, in the language, or to the area indicated. Items from foreign language sources are translated. Those from English-language sources are transcribed, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [ ] are supplied by FBIS/JPRS. Processing indicators such as [Text] or [Excerpts] in the first line of each item indicate how the information was processed from the original. Unfamiliar names which are rendered phonetically or transliterated by FBIS/JPRS are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear from the original source but have been supplied as appropriate to the context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by the source.

## SUBSCRIPTION/PROCUREMENT INFORMATION

The FBIS DAILY REPORT contains current news and information and is published Monday through Friday in 8 volumes: China, East Europe, Soviet Union, East Asia, Near East & South Asia, Africa (Sub-Sahara), Latin America, and West Europe. Supplements to the DAILY REPORTs may also be available periodically and will be distributed to regular DAILY REPORT subscribers. JPRS publications generally contain less time-sensitive information and are published periodically. Current JPRS publications are listed in *Government Reports Announcements* issued semi-monthly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161 and the *Monthly Catalog of U.S. Government Publications* issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

U.S. Government offices may obtain subscriptions to the DAILY REPORTs or JPRS publications (hardcovers or microfiche) at no charge through their sponsoring organizations. DOD consumers are required to submit requests through appropriate

command validation channels to DIA, RTS-2C, Washington, D.C. 20301. (Telephone: (202) 373-3771, Autovon: 243-3771.) For additional information or assistance, call FBIS, (703) 527-2368, or write to P.O. Box 2604, Washington, D.C. 20013.

The public may subscribe to either hardcover or microfiche versions of the DAILY REPORTs and JPRS publications through NTIS at the above address or by calling (703) 487-4630. Subscription rates will be provided by NTIS upon request. Subscriptions are available outside the United States from NTIS or appointed foreign dealers. Back issues or single copies of the DAILY REPORTs and JPRS publications are not available. New subscribers should expect a 30-day delay in receipt of the first issue.

Both the DAILY REPORTs and the JPRS publications are on file for public reference at the Library of Congress and at many Federal Depository Libraries. Reference copies may also be seen at many public and university libraries throughout the United States.